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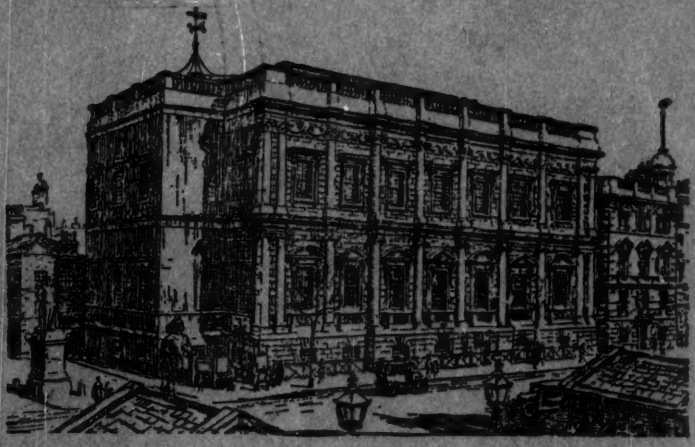

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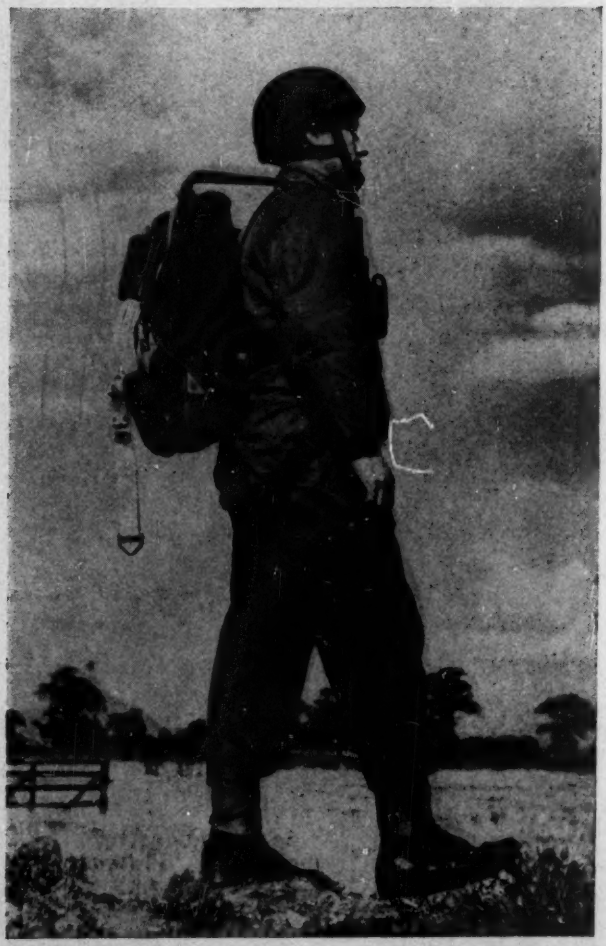

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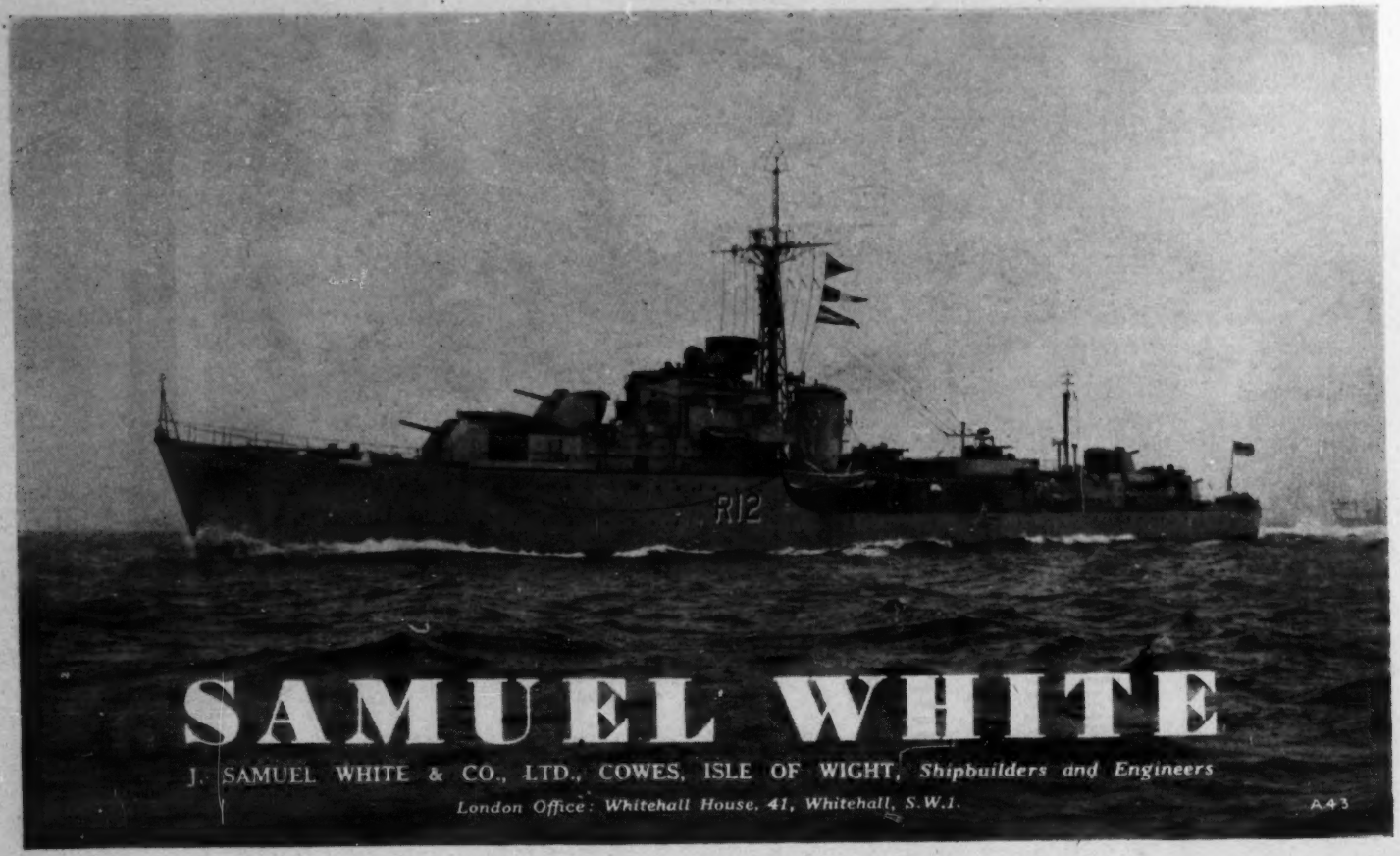

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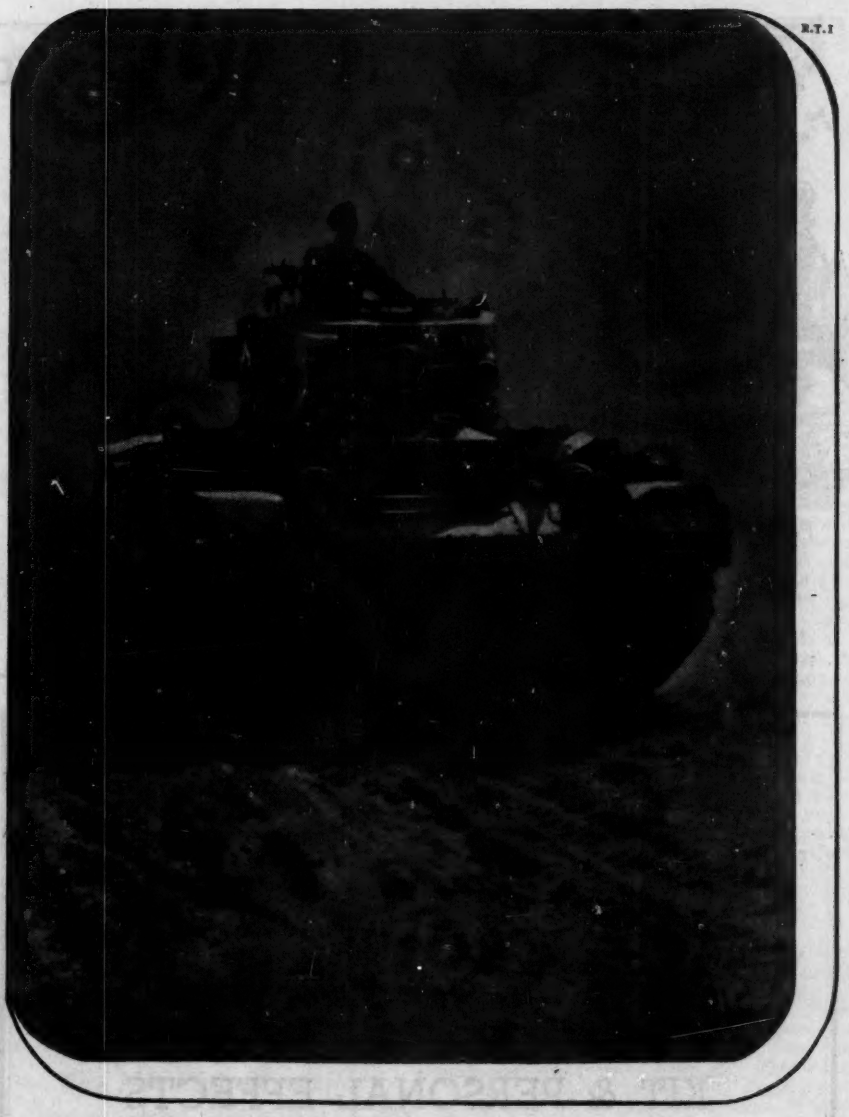

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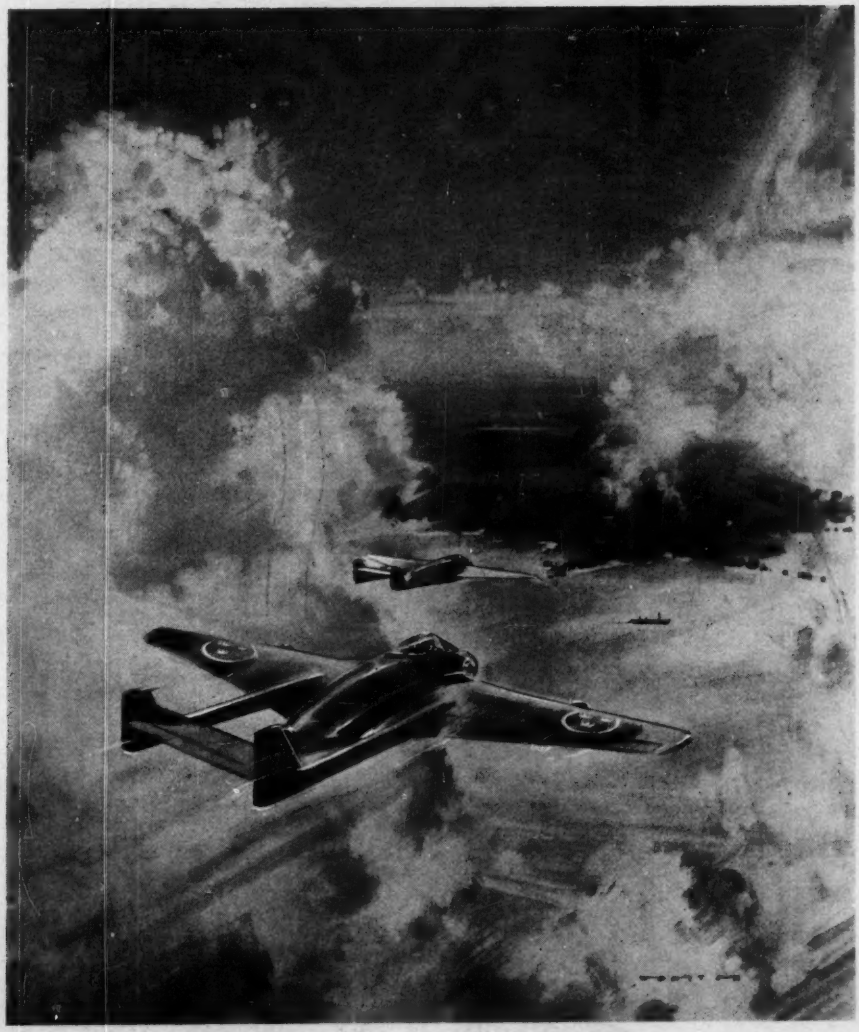

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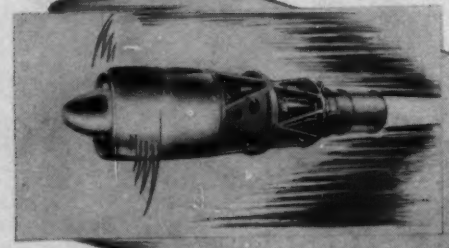

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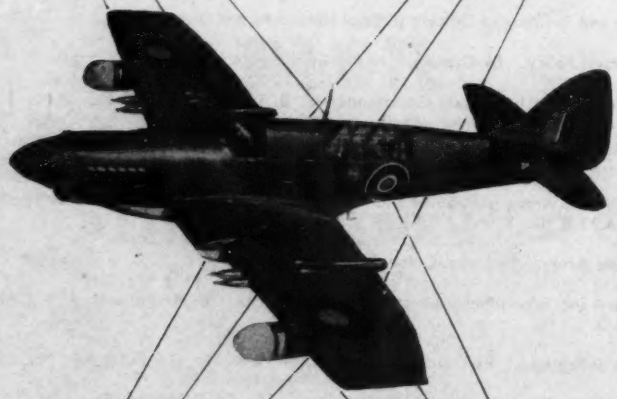

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ANNIVERSARY MEETING

The Anniversary Meeting will be held at 3 p.m. on Tuesday, 2nd March, 1948. The Council will present their Annual Report and Accounts, and there will be an election to fill a vacancy on the Council. Copies of the Annual Reports and Accounts for 1947 can be obtained on application to the Secretary.

COUNCIL

Vice-Presidents

General Sir Harry H. S. Knox, K.C.B., D.S.O., has been elected for a further term as a Vice-President.

Elected Members

General Sir William Slim, G.B.E., K.C.B., D.S.O., M.C., has been elected a Regular Army Member in the vacancy caused by the election of General Sir Walter Kirke to be a Vice-President.

Admiral Sir Charles J. C. Little, G.C.B., G.B.E., having completed three years service, retires, but offers himself for re-election, for which he is eligible.

Representative Members

Air Commodore L. T. Pankhurst, C.B.E., Director of Command and Staff Training, has succeeded Air Commodore N. S. Allison as Air Ministry Representative on the Council

Ex-Officio Members

Air Chief Marshal Sir John Slessor, K.C.B., D.S.O., M.C., has accepted the invitation of the Council to become an ex-officio Member on taking up the appointment of Commandant of the Imperial Defence College.

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Third Officer D. E. Talma, W.R.N.S.
Lieutenant C. M. H. Drummond, R.N.
Captain N. P. de O. Coke, R.M.
Lieutenant J. R. Grindle, R.N.
Commander E. G. Roper, D.S.O., D.S.C., R.N.
Major G. H. Stockley, R.M.
Captain J. A. S. Eccles, C.B.E., R.N.
Captain St. J. R. J. Tyrwhitt, D.S.O., D.S.C.
Lieutenant R. Parkinson, D.S.C., R.N.
Lieutenant I. S. S. Mackay, R.N.
Sub-Lieutenant B. E. Spicer, R.N.
Commander P. G. C. Dickens, D.S.O., M.B.E., D.S.C., R.N.
Lieutenant-Commander C. R. Bax, R.N.
Commander H. G. D. de Chair, D S.C., R.N.

Lieutenant-Commander J. J. S. Hooker, R.N.
Lieutenant-Commander E. P. Reade, D.S.C., R.N.
Captain G. R. G. Allen, C.B.E., D.S.O., R.N.
Commander R. N. Everett, O.B.E., R.N.
Lieutenant-Commander R. A. Haig, R.N.
Lieutenant M. H. Hutton, R.N.
Sub-Lieutenant P. R. D. Kimm, R.N.
Captain F. A. Slocum, O.B.E., R.N.
Captain E. W. Buchanan, D.S.C., R.N.
Lieutenant-Commander R. B. Richardson, R.N.
Captain L. Wild, R.M.

ARMY

Major S. C. H. Davis, R.E.M.E.
Lieut.-Colonel E. Hodgetts, R.E.M.E.
Brigadier L. E. C. M. Perowne, C.B.E., Royal Engineers.
Colonel J. H. Butters, R.E.M.E.
Captain P. B. Stephenson, The King's Regiment.
Major H. M. M. Deighton, R.A.S.C.
Captain J. E. Helingoe, 6th Bn. Parachute Regiment.
Captain C. T. P. Holland, Royal Engineers.
Major J. W. P. Lambie, R.A.S.C.
Lieutenant M. G. Questier, The Queen's Bays.
Major H. J. B. Rice, Royal Artillery.
Captain J. G. B. Chester, M.C., Coldstream Guards.
Major G. J. C. Moss, M.B.E., Royal Signals.
Captain M. A. G. H. Wilkie, Royal Artillery.
Captain J. J. Batchelder, 3rd King's Own Hussars.
Chief Commander J. E. C. Henderson, A.T.S.
Lieutenant J. R. G. Bantock, late 3rd Bn. Q.O. Cameron Highlanders.
Lieut.-Colonel F. W. Collard, Indian Army.
Colonel W. G. Fryer, O.B.E., Royal Engineers.
Captain F. E. White, The North Staffordshire Regiment.
Captain Hon. M. R. V. Eliot, Grenadier Guards.
Major C. O'N. Wallis, M.C., The East Surrey Regiment.
Colonel T. G. Brennan, O.B.E., Royal Artillery.
Lieut.-Colonel J. M. Calvert, D.S.O., Royal Engineers.
Major A. S. Bullivant, 16/5th Lancers.
Lieut.-Colonel H. E. Boulter, D.S.O., The West Yorkshire Regiment, late Indian Army.
Lieut.-Colonel E. C. W. Fowler, late Indian Army.
Lieutenant B. A. S. Hayne, The Highland Light Infantry.
Lieut.-Colonel W. M. Baxter, D.S.O., T.D., late Royal Artillery (T.A.).
Lieut.-Colonel R. A. Anderson, late The Cameronians.
Captain J. E. N. Mostyn, R.A.S.C.
Lieut.-Colonel A. H. Wynn, R.E.M.E.
Major F. R. Webster, Royal Artillery.
Major R. H. B. Hutton, Royal Artillery.
Captain R. S. N. Mans, The Queen's Royal Regiment.
Captain P. J. S. Ball, R.A.S.C.
Major P. H. Sherratt, R.H.A.
Lieutenant R. I. Grant-Suttie, The Black Watch.
Captain J. D. Allan, The Argyll & Sutherland Highlanders.
Captain B. Alexander, late 15th Bn. City of London Regiment (Civil Service Rifles).

Major N. F. Chance, The Royal Irish Fusiliers.
Colonel J. A. Hopwood, D.S.O., The Black Watch.
Major H. G. W. Shakespear, 1st Bn. 2nd Goorkhas.
Lieutenant T. M. Creasey, The Royal Norfolk Regiment.
Major K. M. Stuckey, The South Staffordshire Regiment.
Captain John Swinton, Scots Guards.
Captain E. M. M. Kenney-Herbert, The King's Royal Rifle Corps.
Major W. L. C. Myles, 6th D.C.O. Lancers, Indian Army.
Major H. E. Holden, Royal Engineers.
Captain I. R. L. Shaw, Royal Artillery.
Major R. L. Ellis, Royal Artillery.
Major J. E. Hardman-Mountford, The South Staffordshire Regiment.
Captain D. S. D. Jones-Stamp, The Duke of Wellington's Regiment.
Major T. B. Harrison, M.B., R.A.M.C.
Major B. C. Withers, The Northamptonshire Regiment.
Captain A. J. Nicholson, M.C., Royal Artillery.
Major P. W. H. Jay, R.A.S.C.
Major D. N. Inman, The Devonshire Regiment.
Major N. S. Dane, The Royal Inniskilling Fusiliers.
Major C. Burdon-Taylor, The Durham Light Infantry.
Major A. Fairgrieve, D.S.O., Indian Army.
Captain M. Budd, Royal Artillery.
Major A. D. Young, D.S.O., R.A.M.C.
Major P. F. J. P. Towers-Clark, Coldstream Guards.
Captain P. M. Longmore, M.C., Royal Artillery.
Major D. G. Lock, The Somerset Light Infantry.
Captain A. C. Beach, The Queen's Royal Regiment.
Captain J. R. Shotter, Royal Artillery.
Major J. D. Hoddinott, Royal Artillery.
Captain J. V. Cowen, Royal Engineers.
Major J. L. W. Cordwell, R.A.O.C.
Lieut.-Colonel P. W. Lonnon, Royal Signals.
Lieut.-Colonel D. B. Mackenzie, M.B.E., The Seaforth Highlanders.
Colonel G. S. Knox, O.B.E., Royal Signals.
Major F. A. Rowley, M.C., The Worcestershire Regiment.
Colonel R. Gordon, O.B.E., Defence Staff, Commonwealth Relations, late Sikh Regiment, Indian Army.
Lieutenant R. W. M. Lister, Royal Engineers.
Captain M. F. Sedgwick, Royal Artillery.
Major J. B. Scott, The Green Howards.
Colonel H. W. Mirehouse, M.B.E., late The South Lancashire Regiment.
Captain J. M. Petit, M.B.E., The Royal Norfolk Regiment.
Lieut.-Colonel B. J. Amies, Indian Army.
Lieutenant C. N. A. Buchanan, The Argyll & Sutherland Highlanders.
Lieut.-Colonel E. J. C. Chaytor, Royal Artillery.
Lieutenant L. G. Farncombe, late The Middlesex Regiment.
Captain F. O. Marsh, The Royal Berkshire Regiment.
Major C. J. Phillips, R.E.M.E.
Captain J. A. G. Gribble, XX The Lancashire Fusiliers (T.A.).
Captain J. E. Little, M.C., Royal Artillery.
Major D. J. Cable, M.C., Royal Artillery.
Major H. A. Prince, The King's Regiment.
Captain P. B. Hall, The Duke of Wellington's Regiment.
Lieut.-Colonel J. M. Neilson, R.E.M.E.
Major N. MacP. Boys, The Royal Welch Fusiliers.
Major W. L. Farrow, The Sikh Regiment, I.A.

Captain R. B. Haig, Royal Artillery.
Major J. F. Soper, The Royal Berkshire Regiment.
Colonel V. A. H. Daly, O.B.E., M.C.
Lieut.-Colonel I. H. K. Chauvel, O.B.E., late 6th D.C.O. Lancers, I.A.
Captain H. S. Morrisey, Royal Artillery.
Major K. C. Bishop, M.B.E., T.D., M.A., Sedbergh School J.T.C.
Captain F. J. Cammack, late T.A., and Civil Officer, Admiralty.
Captain A. G. Chesterton, M.C., Royal Artillery.
Lieut.-Colonel J. R. Cochrane, C.B.E., Royal Artillery.
Lieut.-Colonel M. W. B. Deane, late XX The Lancashire Fusiliers.
Major C. M. Moir, The Black Watch.
Captain J. M. G. McCausland, Royal Artillery.
Colonel H. D. H. Y. Nepean, D.S.O., Indian Army.
Lieut.-Colonel W. B. G. Reynolds, Canadian Army.
Captain J. R. D. Sharpe, 15/19th King's Royal Hussars.
Lieut.-Colonel R. W. Tobin, late 10th Gurkha Rifles, I.A.
Major I. H. Wethey, 4/14th Punjab Regiment, I.A.
Major H. R. Alden, R.A.O.C.
Major P. C. S. Heidenstam, The Gloucestershire Regiment.
Major R. H. Howell, M.B.E., The Cheshire Regiment.
Lieut.-Colonel F. Richards, A.M.I.Mech.E., R.A.S.C.
Captain C. E. K. Speller, The Dorsetshire Regiment.
Major C. G. Funnell, Royal Engineers.
Major A. M. Lamont, Royal Artillery.
Major J. H. P. Curtis, M.C., The King's Royal Rifle Corps.
Brigadier A. B. McPherson, C.B.E., M.V.O., M.C., Indian Army.
Captain D. J. A. Waller, M.C., Xth Royal Hussars.
Captain B. F. G. Finlay, The Worcestershire Regiment.
Major D. B. McMorland, The South Lancashire Regiment.
Officer Cadet W. A. Clode, R.M.A., Sandhurst.
Major D. G. C. Sutherland, M.C., The Black Watch.
Major R. K. Chater, The Royal Tank Regiment.
Captain W. C. Giblett, The Northamptonshire Regiment.
Captain E. P. Woods, Welsh Guards.
Captain P. B. Ash Edwards, M.C., Royal Artillery.
Major F. R. M. Hammond, R.A.S.C.
Lieut.-Colonel R. N. Hanbury, 479 H.A.A. Regt. (Herts. Res.), T.A.
Major Eric Holmes, Royal Artillery.
Major G. C. Meares, M.B.E., The Essex Regiment.
Major D. C. McD. Mather, M.C., Welsh Guards.
Lieut.-Colonel R. R. M. Perceval, C.B.E., M.C., late Royal Artillery.
Major R. J. Brandon, Royal Artillery.
Captain L. H. Plummer, Royal Artillery (T.A.).
Major W. T. Sedgwick, Royal Artillery.
Lieut.-Colonel F. L. R. Munn, D.S.O., M.C., Indian Army.
Major G. H. Wotton, Royal Signals.
Captain J. C. S. McDouall, Royal Signals.
Major M. C. Sands, Royal Artillery.
Colonel J. H. T. Icke.
Captain E. N. Mumford, M.C., Royal Artillery.
Captain D. E. Raley, Royal Artillery.
Lieutenant M. J. P. Lacy, late The Life Guards.
Lieut.-Colonel J. A. Gould, M.C., late The Rifle Brigade, and Lieut.-Colonel, Home Guard.
Major L. W. G. Hamilton, The Dorsetshire Regiment.

ROYAL AIR FORCE

Flying Officer W. J. Stacey, R.A.F.
Wing Commander J. G. Davis, C.B.E., R.A.F.
Squadron Leader H. V. Bunting, R.A.F.
Group Captain S. H. V. Harris, R.A.F.
Air Commodore A. J. W. Geddes, C.B.E., D.S.O.
Wing Commander A. K. Furse, R.A.F.
Squadron Leader H. T. Morgan, R.A.F.
Squadron Leader K. J. F. Toop, R.A.F.
Group Captain C. G. Lott, C.B.E., D.S.O., D.F.C., R.A.F.
Squadron Leader W. G. V. Lydan, R.A.F.
Squadron Leader G. J. N. Neal, R.A.F.
Wing Commander R. J. T. Beattie, R.A.F.
Wing Commander I. D. N. Lawson, D.F.C., R.A.F.
Squadron Leader J. E. T. Haile, R.A.F.
Squadron Leader R. D. Sheardown, R.A.F.
Squadron Leader W. J. Johnson, D.F.C., R.A.F.
Squadron Leader G. N. Street, O.B.E., R.A.F.
Flight Lieutenant T. J. Burdett, R.A.F.
Group Captain L. F. Brown, R.A.F.
Flight Lieutenant D. J. Cummings, R.A.F.
Squadron Leader V. J. G. Cole, R.A.F.
Group Captain W. P. Welch, R.A.F.
Squadron Leader G. W. W. Waddington, D.F.C., R.A.F.
Wing Commander A. C. Neill, R.A.F.
Squadron Leader G. C. Banning-Lover, A.F.C., R.A.F.
Flight Lieutenant F. E. Clark, R.A.F.
Squadron Leader K. A. Major, D.F.C., R.A.F.
Squadron Leader G. A. Norval, R.A.F.
Squadron Leader B. Webster, R.A.F.
Squadron Leader A. L. Fussell, R.A.F.
Squadron Leader L. J. Ward, D.F.C., R.A.F.
Wing Commander D. F. Laslett, R.A.F.
Squadron Leader H. R. Phillips, R.A.F.
Flight Lieutenant C. H. Miller, R.A.F.
Flight Lieutenant L. M. Courtenay, R.A.F.
Flight Lieutenant D. W. Densham, R.A.F.
Wing Commander I. G. Esplin, O.B.E., D.F.C., M.A., B.Ee., R.A.F.
Flight Lieutenant M. G. Fountain, R.A.F.
Wing Commander R. A. R. Coote-Robinson, O.B.E., R.A.F.
Wing Commander J. H. Chaplin, D.S.O., D.F.C., R.A.F.
Flight Lieutenant E. Cooke, R.A.F.
Wing Commander K. S. Batchelor, D.F.C., R.A.F.
Squadron Leader A. P. Vicary, M.B.E., R.A.F.
Squadron Leader G. H. Wass, B.Sc., A.F.R.A.E.C., R.A.F.
Wing Commander E. J. Brooks, D.F.C., R.A.F.
Squadron Leader W. J. F. Fenton, R.A.F.
Squadron Leader O. J. Wells, R.A.F.
Wing Commander E. M. T. Howell, R.A.F.
Squadron Leader P. R. ap Ellis, R.A.F.
Squadron Leader Narasimhan Krishnamachari, R.I.A.F.
Flight Lieutenant A. Contaris, R.A.F.
Flight Lieutenant R. M. Cooke, R.A.F.
Wing Commander E. E. M. Angell, A.F.C., R.A.F.
Group Captain P. I. Harris, D.F.C., R.A.F.

Wing Commander H. M. C. Harwood, O.B.E., R.A.F.
Wing Commander K. R. Slater, A.F.C., R.A.F.
Flight Lieutenant D. H. Y. McRae, R.A.F.
Flight Lieutenant E. W. J. Bevan, R.A.F.
The Rev. W. E. Woosnam-Jones, Asst. Chaplain-in-Chief, Air Ministry.
Squadron Leader A. J. Orbell, R.A.F. Regiment.
Flight Lieutenant G. F. Satchwell, R.A.F.
Flight Lieutenant P. A. Knapton, D.F.C., R.A.F.
Squadron Leader B. O. Winstone, R.A.F.
Wing Commander H. P. Jenkins, R.A.F.
Wing Commander A. McI. Peacock, R.A.F.

INCREASE OF SUBSCRIPTIONS

As from the 1st January, 1948, the rates of subscription were increased to :—

Annual Subscription	£1 10 0
Life Subscription	£24 0 0
or four yearly instalments of	£6 6 0 each
Covenanted Life Subscription—Seven yearly instalments of	£3 12 0 each

Annual Members who have not yet instructed their banks are requested to do so without delay. If they ask, they can be supplied with new bankers orders, in which event they are requested to send the requisite remittance to make up the amount due for the current year at the same time.

Members who are in process of paying their Life Subscriptions by yearly instalments are not called upon for any increase.

COVENANTED SUBSCRIPTIONS

The Council hope that many more Members will support the Scheme for Covenanted Subscriptions, details of which have been circulated to all Members.

This materially assists the Institution because it enables Income Tax at the full current rate to be reclaimed on each subscription.

To date 1,236 Annual and 523 Life Members have signed the necessary Deeds.

Any Member who has not received his copy of the Scheme or who requires new forms is requested to communicate with the Secretary.

LIAISON OFFICERS

With the object of making the facilities afforded by membership of the Institution better known to the Services, the Council have invited the principal Commands at Home and Overseas to nominate Liaison Officers. Meetings of these Liaison Officers take place periodically and the scheme has proved very valuable.

It is also hoped that the Liaison Officers will be able to suggest, from time to time, ways in which the Institution can be of greater value to the serving officer.

Liaison Officers have been provided with Particulars of the Institution and forms to enable them to enrol members without further formality.

The following is a list of officers who have been nominated as Liaison Officers and the Commands or Establishments they represent :—

NAVY

Establishment or Command	*Name*
Home Fleet	Lieut.-Colonel G. W. Ross, R.M.
Flag Officer Air (Home)	Captain S. J. S. Boord, R.N.
R.N. College, Greenwich	Captain R. H. Gwyn-Williams, R.M.

Establishment of Command	*Name*
Flag Officer, Scotland and Northern Ireland.	Commander D. E. G. Wemyss, D.S.O., D.S.C., R.N.
H.M.S. " Excellent "	Lieutenant-Commander J. de G. Lamotte, R.N.
H.M.S. " Mercury "	Lieutenant-Commander P. W. W. Graham, R.N.
H.M.S. " Dryad "...	Lieutenant-Commander F. B. P. Brayne-Nicholls, D.S.C., R.N.
Combined Operations Headquarters.	Commander R. M. Aubrey, D.S.C., R.N.
School of Combined Operations ...	Lieut.-Colonel J. S. Humphrey, M.B.E.
Reserve Fleet	Lieutenant-Commander A. Gray, D.S.O. R.N.
R.N. Barracks, Chatham... ...	Lieutenant-Commander R. S. Abram, D.S.C., R.N.
R.N. Barracks, Portsmouth ...	Lieutenant-Commander A. J. R. White, D.S.C., R.N.
R.N. Barracks, Devonport ...	Commander P. W. Gretton, D.S.O., O.B.E., D.S.C., R.N.
R.M. Barracks, Chatham... ...	Major R. D. Crombie, R.M.
R.M. Barracks, Plymouth ...	Captain P. L. Mackay, R.M.
R.M. Commando Group, Faringdon	Major I. De'ath, D.S.O., M.B.E., R.M.
Mediterranean Station	Lieutenant-Commander J. B. Lamb, D.S.C., R.N.
	ARMY
Anti-Aircraft Command	Brigadier C. G. Bicknell, C.B.E., M.C.
Eastern Command	Lieut.-Colonel G. W. H. Peters, D.S.O., M.C.
Northern Command	Lieut.-Colonel D. P. St. C. Roissier, O.B.E.
Scottish Command	Lieut.-Colonel S. Ritchie, O.B.E.
Western Command	Major R. B. Hodgkinson, M.C.
Southern Command	Lieut.-Colonel K. T. Roper.
London District	Major H. G. B. Knight, M.C.
Northern Ireland District ...	Major R. H. W. Fowler.
B.A.O.R.	Lieut.-Colonel R. E. Osborne-Smith, D.S.O.
B.T.A.	Lieut.-Colonel J. R. Johnson, D.S.O., M.C.
C.M.F.	Lieut.-Colonel C. I. H. Dunbar, D.S.O.
Far East Land Forces	Lieut.-Colonel D. E. B. Talbot, D.S.O., M.C.
	ROYAL AIR FORCE
Bomber Command	Wing Commander R. A. T. Stowell, D.F.C.
Fighter Command...	Wing Commander J. H. Iremonger, D.F.C.
Coastal Command...	Group Captain J. E. Thomas, D.F.C.
Flying Training Command ...	Wing Commander A. R. D. McDonnell, D.F.C.
Technical Training Command ...	Wing Commander E. F. Tonge.
Transport Command	Wing Commander F. Murray.
Maintenance Command	Group Captain B. S. Cartmel, O.B.E.
Air Command Far East	Wing Commander R. D. Stubbs, D.F.C.

TRENCH GASCOIGNE PRIZE ESSAY COMPETITION, 1947

The following awards have been made :—

First Prize of Thirty Guineas ...	Wing Commander S. G. Walker, O.B.E.
Two Second Prizes of Fifteen Guineas each	Brigadier F. A. S. Clarke, D.S.O. Major M. E. Bransby-Williams, R.A.

The following Essays were received :—

" Fas et Gloria "

" La Paloma "
" God be thanked whate'er comes after, I have lived and toiled with Men."
" If the trumpet give an uncertain sound who shall prepare himself to the battle."
" Servants of the State."
" La Force se Defend."
" Caedimus Noctu."
" Faithful Service is Its Own Reward."
" Difficulties are made to be overcome."
" Fiat Justitia Ruat Coelum."
" Tria Juncta in Uno."
" Arms and the Man."
" J'ai voulu voir, j'ai vu."
" And now to action."
" Aquila, who found waiting such a grievous business."
" Pro Patria Mori."
" Suaviter in Modo, Fortiter in re."
" The Greeks had a word for it."
" En Ferus Hostis."
" Dieu et mon droit."
" Oaktree."
" Treat a Man greatly and he will be great."

TRENCH GASCOIGNE PRIZE ESSAY COMPETITION, 1948

Particulars of this competition will be found in the leaflet enclosed in this JOURNAL.

EARDLEY-WILMOT MEDAL COMPETITION

This Gold Medal has been won by Lieutenant-Commander R. C. P. Wainwright, D.S.C., R.N.

The following essays were received :—

" Per Mare Per Caelum, nobis tutus ibis."
" Persevere."
" A Esse Ad Posse."

MUSEUM

ADDITIONS

Gold watch belonging to Vice-Admiral Sir Peter Warren, K.B., who commanded the naval forces at the capture of Louisberg by the New Englanders in 1745. (9354). Given by Commander H. M. Howard, O.B.E., R.N.V.R.

Model of the De Havilland Vampire Mk. I Interceptor. (9355.) Given by The De Havilland Aircraft Co., Ltd.

Two medals awarded to Lieutenant G. H. Rainier, R.N., Zulu War, 1879 and Abyssinia, 1868. (9356.) Given by Captain J. W. Rainier, R.N.

Union Flag, made by British Prisoners of War in Camp No. 10D and the first to be raised in Japan after the capitulation on 15th August, 1945. (9357.) Given by Major F. H. Frankcom on behalf of the officers and other ranks in the Camp.

Five badges of units of the French Army and Air Force. (9358.) Given by Group Captain T. L. Leather, R.A.F.

Plume of the 18th Hussars, Waterloo, 1815. (9359.) Given by Lady Valda Machell.

Waterloo Medal awarded to Lieutenant J. T. Machell, 18th Hussars. (9360.) Given by Lady Valda Machell.

Helmet of the Bengal Horse Artillery. (9361.) Given by Mrs. D. Boileau.

Medals, decorations, and certificate of service of the late Sister L. M. Thurling. (9362.) Given by Miss Ruby Thurling.

Model of the De Havilland Mosquito Fighter-Bomber. (9363.) Given by the De Havilland Aircraft Co., Ltd.

The original Sam Browne Belt and holster designed and worn by General Sir Sam Browne, V.C., G.C.B., G.C.S.I. (9364.) Given by the former officers of Sam Browne's Cavalry (Frontier Force, India.)

JOURNAL

Members are invited to offer suitable contributions for the JOURNAL. Confidential matter cannot be used, but there is ample scope for professional articles which contain useful lessons of the War; also contributions of a general Service character, such as Strategic Principles, Command and Leadership, Morale, Staff Work, Naval, Military and Air Force history, Customs and Traditions.

The Editor is authorized to receive articles from serving officers, and if found suitable, to obtain permission for their publication from the appropriate Service Department.

Army Officers are reminded that such articles must be accompanied by the written approval of the author's Commanding Officer.

REQUEST FOR BACK NUMBERS

The Editor will be grateful for any copies of the JOURNAL for August and November, 1947, with which Members may have finished, in order to meet applications for these numbers.

CHANGES OF ADDRESS

Members are particularly requested to notify any change of address which will affect the dispatch of the JOURNAL.

Naval Officers' Addresses

Naval Officers are strongly advised to keep the Institution informed of their address as JOURNALS sent to them via C.W. Branch of the Admiralty are invariably greatly delayed.

"WHAT TO READ"

The articles on "What to Read," which have appeared in the JOURNAL, have been brought up-to-date and republished in pamphlet form. Copies can be supplied, price 1s. 6d., post free.

Photograph by Charles E. Brown

A "STRINGBAG" AND H.M.S. "ARK ROYAL"

(See "Swordfish Saga," p. 75)

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[Authors alone are responsible for the contents of their respective Papers. All communications, except those for perusal by the Editor only, should be addressed to the Secretary, Royal United Service Institution.]

THE OTHER SIDE OF THE IRON CURTAIN

By B. KINGSLEY MARTIN

On Thursday, 6th November, 1947, at 3 p.m.

MARSHAL OF THE ROYAL AIR FORCE LORD NEWALL, G.C.B., O.M., G.C.M.G., C. B.E. A.M., in the Chair

THE CHAIRMAN: Mr. Kingsley Martin, who has so kindly come to talk to us, is known to the majority of you. You are probably all listeners to the wireless and, if not, you probably know the weekly journal *The New Statesman and Nation*, of which he has been Editor for some sixteen years. Before that he was closely associated with the editorial staff of *The Manchester Guardian*. Therefore his experience is very considerable, and we are most grateful to him for coming here to-day to give us his views on a subject in which we are so interested.

LECTURE

THE other day I saw a friend off to France on the Continental Train. He was carrying with him a brown-paper parcel—presents for his family in France. It contained two English loaves and two of the kind we call French loaves. Now that is something almost incredible, that it should be worth while taking French bread to Paris.

Europe to-day suffers from two things above all—a drought and shortage of dollars. Western Europe is near a quite final catastrophe. Even in a country which is notoriously confortable and pleasant to visit, like Denmark, where I went the other day, you cannot get anything at all without coupons; you give them up in every restaurant and for every hotel meal. Most of the butter and bacon is exported. Denmark's position is not so very different from our own. When you go to France or, above all, I would say, to Italy, you realize that we in this country are not badly off.

A friend of mine who was doing a serious investigation in Rome the other day remarked on the ease and comfort of the life of the well-to-do. Then he took the trouble to go round the back streets and saw people actually starving. Now this, of course, indicates an uncontrolled economy, and here I am not trying to make propaganda; I am just stating the facts, which would be admitted to you by anybody who knows them. If you have a grain shortage and you do not organize your economy, then there is going to be extreme poverty for a very large mass of the people. The dollars of the World are drying up; the countries are increasingly closing their markets to imports which they cannot afford and trying desperately to export, and

as other countries close up their markets so it becomes more and more difficult to export. It looks as if we are all going into our own kennels with such bones as we can find and deciding to starve separately and presumably quietly.

One obvious exception is the case of Belgium (I am leaving out the ex-neutral countries, Sweden and Switzerland). Belgium is in a special category, because Belgium happens to be a dollar creditor. She has uranium and the Americans paid her for the use of her services during the occupation.

When you move farther East, as I have just recently, and go to Czechoslovakia or Poland or Yugoslavia, where I was a little earlier, you come upon an entirely different situation. Those countries are not beginning on the basis of a prosperous middle-class society. They are, so to speak, beginning from scratch. It is only when you get to Poland (and I am not here disregarding Germany, which is now in a desperate condition) that you really understand what the War was. In the West we had no war at all in comparison with the War in eastern Europe. Our losses, heavy as they were, were just nothing in comparison with those of eastern Europe. I think it is officially believed that the Russians lost in civilian and Service personnel something between fifteen and twenty million people. In Poland the population, by various means, including the incineration of several millions, was reduced from twenty-three millions to sixteen millions.

In France and in Germany, the agricultural areas are untouched; in France, the peasants are doing as well as ever, and the difficulty is to get their food to the towns. But when you get to Eastern Europe, the whole country is destroyed. I have motored hundreds of miles through what has been very prosperous country, and I have seen the villages flat on the ground. We say when we go to Germany that the towns are flat. We feel, when we have looked at Essen and Dusseldorf, that nothing could be much worse in terms of destruction. But when you get to Warsaw you find something which is really flat. The Ghetto area is as flat as the shore by the sea. It is as though a plough had been right over it. There is only one possible programme for such a country, and that is to build, and get on with resettlement as fast as it can.

I can most quickly illustrate the difference between the two wars by describing a visit to a cemetery to which some members of the Polish Resistance Movement took me in the middle of some forests of southern Poland in the area of what used to be Breslau. There, in the middle of some very remote woods, we came to a transit camp where they reckoned that something like fifteen million people had passed through during the War, mainly Poles and Russians and other Slavs, but also many British. The first thing we found was a small British cemetery—neat, very correct. It was overgrown with weeds, but every tombstone was there—the cross and inscription, the man's name, origin and age. Some were old men. It included Indians, it included some Jewish Service men, and so on. We were told that a British officer had been able to carry out a proper service over the dead. We went on a few yards where a skeleton had been found. Where there was one skeleton there were likely to be several others. They opened up a mound and went on excavating, and I saw a photograph of what they found—some 150,000 bodies; people had been thrown in, often alive as far as we could see, when they were buried. Bundles of Russians in twelves had been thrown in bound together, their bodies emaciated to the last degree. That story may help to explain just a little the kind of difference you feel when you pass from the West to the East of Europe. The two wars become distinct. The Germans fought a war which over here was still in the nature of a war by rules. You and I, of course, may know particular instances where the Germans behaved badly

to British personnel captured in Germany, but those are exceptions. On the whole the Germans obeyed the Hague conventions in the West. But in the East, it was a war of extermination.

It is only when you understand this that you begin to realize this psychological gap that now appears between the Slavs and the western countries. The one thing on which everybody in Poland would be in agreement would be the fear that we were again rebuilding Germany for another attack on eastern Europe. You may think the Poles behaved foolishly in taking so much German territory and deporting Germans on so vast a scale. But in Poland itself you begin to understand how it happened.

In Yugoslavia I went about in a jeep with a British Colonel who had fought with the Partisans there. We slept at nights in villages where he himself had been in a hide-out. Boys of the partisan movement went into the woods at 18 ; they fought a hand-to-hand conflict such as this country has never had any conception of. You will there find yourself in an atmosphere which I can only describe as belonging to an earlier period of society—the " heroic age." The Partisans built up a force of 400,000 men. They actually held 25 divisions of enemy troops in Yugoslavia during the latter part of the War, and they necessarily carried out a social revolution. The upper classes there were on the whole ready to accept the Germans and their Quislings—not all of them, but very many. The people who fought this war and came through have not the slightest intention of going back to the old Serbian dictatorship. The Partisan armies were made up of Slavs, Croats, Macedonians and Serbs. For the first time those four groups, who have hated each other like poison throughout history, had fought on the same side. All four were included in Tito's new Army. All four were included in the Government. Those of you who know anything about that part of the World will understand why I emphasize the fact that I have met Serb peasants who admitted that there might be some grain of decency in Croat peasants. Some Croats actually believe that not all Serbs are their enemies. They talk in terms of a single united country of Yugoslavia, not in terms of a Serb or Croat dictatorship.

In Yugoslavia many things are happening which are bad ; but some are good. Just as in Poland, you must not expect people who have come through that incredible war to be tolerant. It would be as foolish to expect the Partisans who have survived to be Gladstonian Liberals as it would be to blame people in XVIth Century England for not appreciating the toleration of the XIXth Century. I am always trying to look for a way in which to explain that point to people who are still astonished when some peasant leader, who has been hostile to the Government, leaves that part of the World, or some public man is executed, perhaps unjustly. There has never been a case in history of a country which has gone through a great revolution and then behaved tolerantly to those who have been defeated. It is not a question of saying that all the new Government do is right. Personally, I think they have been often wrong. But let us have some sense of perspective.

When you read a history of England, what does the chapter about Henry VIII say ? It will tell you that he got rid finally of the Barons who had turned England into a chaos of Civil War ; that he gave England a Navy ; that he gave England unity for the first time in her history ; that he was very popular with the common people and extremely unpopular with the old ruling class ; that he was a very great King who united England. Then possibly you may read a paragraph at the end of the chapter which says that unfortunately Henry VIII was not a very good husband, that he

had six wives and executed some of them ; that some of the executions which he carried out on members of the old ruling class were not altogether as they should be. You read that he was unkind to the monks whom he threw into the snow when he gave us the Protestant Church. But the main story, historically speaking, is of what Henry VIII did for the growth and greatness of this country.

Similarly, a history book of the future will say of Tito that he laid the foundation of a Yugoslavia which is more dynamic than any other country I have ever seen, except possibly Poland, and that he persuaded the Croats and Serbs and Slavs to work together. There will then be a paragraph to say " Unfortunately Tito's partisan movement was not very tolerant. Unfortunately a number of bad executions took place which should not have taken place. The revolutionary movement was not all sweetness and light." In short, the Partisans are damned well going to keep the power now that they have got it, and it would be foolish to expect them to be kindly tolerant Liberals or for that matter to be at first very efficient. The fact that a boy fought with incredible heroism in the woods for five years does not necessarily make him a good President of the Board of Trade. It makes him determined that his country shall not fall into its former position ; it makes him determined to build a great Yugoslavia, in alliance with the other great Slav Powers.

Similarly, in Poland I talked to Mr. Gomelko, leader of the Communist Party in Poland, and in Czechoslovakia. I also asked people why their countries did not come to Paris to discuss the Marshall proposals. The first reason is that the Russians did not want them to go. In the case of the Czechs, the Russians stopped them coming. But that was not the whole story. Communists do not believe that we in the Western World will ever have a " Marshall Plan." They believe that western capitalism will slump. They think America will have another slump such as occurred in 1929 ; and they believe that that slump will mean that America will not be so powerful in Europe. They think that the only way in which they can develop themselves is by their own work, not by borrowing money.

Again, if this historian I am talking about writes about Russia, he will have, I think (certainly he will if I am the one writing the book) some tough things to say about Stalin ; but he will also have to say that Stalin did something that no western historian or economist thought possible : he transformed the whole of the eastern peasant economy of the Soviet Union into a powerful industrial country, capable of resisting Germany, and he did it without getting into debt to capitalist countries.[1] Now there is not one economist in western Europe who did not think that that was an absolutely ludicrous and impossible attempt when Stalin started to do it in the two Five-year Plans. The human cost was colossal. But Stalin built an industrial economy without dependence on foreign capital.

Now you will not find anybody in eastern Europe who would not like dollars, because they have very little of anything, but neither would you find anyone who

[1] According to a recent statement in Washington, negotiations are to be resumed to settle the Soviet Union's war-time Lend-Lease bill of £2,574,250,000.

Under the Civil Supplies Agreement of 1941, civiliah goods to the value of £140,000,000 to £150,000,000 were ordered by the Soviet Union from Britain. The Anglo-Soviet trade agreement of 27th December, 1947, Art. 5, mentions that the total credits still owing to Britain by the Soviet-Union are £70,000,000 to £75,000,000.

Without this immense assistance and the sacrifices of the British and American " Russian Convoys," the Soviet Union could not have resisted Germany successfully.—EDITOR.

would be prepared to become dependent on or in debt to the United States. They are beginning from scratch, as Russia did. They look at us in debt, trying to borrow, not sure about what Government we want, arguing this and arguing that—they look at us with astonishment because they think there is only one way of recovering, that is to plan what you want to do and then get down to doing it. They could not imagine that there could be anything else to do.

Warsaw is being rebuilt. There are many houses which cannot be rebuilt privately because they have to be restored as they used to be by the State. But you will see in the early morning hundreds of people, boys from all over eastern Europe, Boy Scouts from Yugoslavia or Poland, and bands of Polish women taking the bricks out of the rubble, shaking them and piling them up; you will see the peasants coming along in small carts, filling the small carts up with bricks, and taking them to a building site. They do not ask for or require any dollar help for that.

Now the one thing that, as I say, would unite all these people, would be fear that the western Powers were again going to rebuild Germany as a hostile Power. I am not quite sure whether everybody, even amongst so highly sophisticated and expert an audience as this, realizes how the story between the two wars looks to eastern Europe. After 1918, mainly in the way of business and later in the way of policy, we lent money and sold the raw material for arms to the Germans which enabled them vastly to exceed any reasonable balance in their economy, in the Ruhr and the Rhine, and then our statesmen believed Hitler when he said that he was going to use this, the greatest single source of power in the world, against the East and not against the West. Therefore, to the East it looks as if we spent the time between the two wars in arming Germany for an attack on the Slav world. To-day they pick up their newspapers and they see that the Americans state that they are going to rebuild the Ruhr and the Rhine. We of course feel that we absolutely must, because we cannot afford to have a slum in the middle of Europe and we cannot afford to keep the Germans alive by paying dollars which we have not got. But as they read this, the Slavs fear once again that we are going to repeat the story and rebuild military Germany for use against the East.

If they follow the debates in the American Press on the Truman Doctrine or the Marshall proposals, everything they read confirms that view. As they see it, the Truman Doctrine amounts to this: in whatever part of the World Russia might look like being strong, American would support the anti-Communist forces, whether they were Fascist forces or Liberal forces, whether they were Chinese, Royalist Greek, dubious Turkish, Italian or whatever they were, or even possibly in the long run once again National Socialist Germany. Now the Russians and the eastern European Powers have, to my mind and to your minds, behaved in many respects in a lunatic way. They have done much to encourage the fears that are so widespread in the United States. But let me put the thing the other way round, as I saw it in eastern Europe. The Truman Doctrine is an announcement of a vast expansionist plan by the United States, and if you look at the publications of Henry Luce or Colonel MacCormick, for instance, you will see quite openly preached the doctrine that the British Empire is to disappear, that this is to be the American Century in which peace and order are to be kept in the World by the power of the American Air Force.

Very influential publicists in the United States have in effect declared war on the entire Slav world. That is how the Slavs see it, and when the Marshall proposals

came, they regarded them as only another version of the Truman Doctrine. They do not think that the United States is moved by the sufferings of Europe. They do not think that the people who, under the American plan, deliberately destroyed the entire industrial potential of western Germany and said that western Germany would be reduced to the position of a pastoral Power—they do not think that means that America has suddenly become humanitarian or sorry that the Germans are hungry or hard up. They think it means that America has become frightened about the spread of Communism and is going to try to create something in the West that will hold Communism back.

It is quite true that if you ask prominent Americans, particularly American business men, what countries they regard as hopeful for the future, what countries they think it worth while spending American capital on, they will reply "Germany, Japan and Italy," because in those countries labour is docile; in those countries the Government will do what America tells them; in those countries the people may be prepared to run risks against Russia. Some openly say so. Therefore the Slavs begin with the assumption that the Marshall proposals, which, mind you, in their original form were of first-class importance and admirably conceived—they see the Marshall proposals as only another form of the Truman Doctrine, and they will be confirmed in that view by the fact that those proposals, in so far as they go through at all, will be put through the United States Congress, not by economic arguments, not by the idea that it is worth while to save the people of Europe from starving, but mainly on the plea that if America does not feed Europe, Europe will go Communist.

I could easily have given another lecture analysing my reasons for believing that the Soviet Union has made profound mistakes and faults of policy since the War. But I am interested in explaining the nature of the clash in Europe. The American view is that if they get a half chance the Russians intend to occupy the whole of Europe and that it is therefore worth while spending so many American dollars to stop this; while the Slav view is that there will be a capitalist crash of the first magnitude in the next few years and that, if they can only hold on now and build up from where they are now, Socialism in the eastern part of the World can be a success, while capitalism in the western part of the World will be an obvious failure.

The clash will appear when the Foreign Ministers meet this month to discuss the future of Europe, because you see it follows from what I have said that the future will turn on what we decide about Germany. Nobody is very hopeful about the immediate issue. The Foreign Ministers will not, I think, reach agreement about Germany. Some people assume that therefore Europe is going to be divided sharply into two halves; that there will be an absolute dividing line down the middle with one half controlled by America and the other half controlled by Russia; and that there we shall remain until sooner or later there comes a war—which, if it comes, we know with modern weapons, will finish the kind of Europe we know, including this island.

I do not believe myself that any of this is a foregone conclusion. I believe that Walter Lippmann, who has been writing some brilliant articles in the *Herald Tribune*, is right when he says that as a result of the "cold war" between the Russians and the United States, the Russians know that they cannot advance even if they wanted to. Lippmann even argues that, if they are challenged, they may be induced to move out of Germany if we also move out of Germany, and that you may get a condition

lasting perhaps for many years in which the Russians are thrown back to build up their own sphere of interest knowing that it is too dangerous to advance further.

In those circumstances, everything depends on the way in which American aid and British leadership is supplied to western Europe. If some of the prognostications about what will happen to the Marshall proposals come off—if all we get is bits of lend-lease to this country and that, bits of aid here and there to bolster up the Catholic and Right Wing Governments and prevent the others from coming into power—then I think the Russians will be right about what will happen in western Europe, because the problem of rebuilding western Europe is, as Marshall himself quite clearly saw, a matter of offering Europe an economic and psychological stimulus which will enable people again to believe in their future. It would involve for the Ruhr and the Rhine an international solution—German management with international control. We should see to it that the vast potential of western Germany should be a centre of production of consumers' goods for Europe, not again a centre of armaments. If you could do that and also persuade the countries of western Europe to trade more freely with each other again, as Marshall wishes them to; if this help from America comes without political strings, which would be rejected by large proportions of the populations of those countries—if that happens, then you might begin to see the rebirth in western Europe of Governments which are more generally representative, and a hope of economic recovery.

In that way Germany could be integrated into the economy of Europe. As long as Germany is regarded as a problem by itself, it is insoluble. If we think of how far you can make Germany strong again, there is no solution. If you think of the great resources of Germany as being put to the purpose of the rebuilding of Europe, it is not very difficult to imagine a solution for Europe. If we begin on those lines, Europe would not be divided into two by an Iron Curtain, because all the countries of eastern Europe desire desperately and need to trade with the West; but they will not trade according to the capitalist pattern because that means having dollar control of their planned economy. It is impossible, if you examine the economics of Czechoslovakia or Poland, to imagine them doing ordinary business in western terms, because their economy is entirely a controlled affair: it is a Government affair. What they are extremely anxious to do is bulk exchange. Poland, for instance, is the only country in Europe with an export surplus of coal. She wants almost everything. She is prepared to exchange that coal for things that the rest of Europe will offer her in exchange. Such bargains are now being made.

If I am right that war is improbable for a variety of reasons for ten years, and if America spends her dollars in the intelligent way which Marshall originally had in view, you may see growing up a new and revised economy in western Europe which would offer to eastern Europe the things that eastern Europe requires, and eastern Europe will have that food surplus without which western Europe is not able to feed itself. On that condition—it is a big hope and a big "if"—on that condition there is a possible hope for Europe. There is actually no hope for Europe if we regard eastern Europe just as enemy territory and try to build western Europe as a bastion against it.

If we take the view that the best reply to Communism is economic hope in western Europe—and it is the only hope—and we begin to integrate the economies of western Europe with the help of the dollar, then there will be the possibility and rather more than the possibility of getting together economically with eastern

Europe. In that case the Iron Curtain will gradually break down because trade will slip through it. It will gradually break down because Germany belongs to both and it is not going to be possible to prevent the Germans crossing their own frontier from one part of Germany to another. That way lies the beginning of hope. Therefore I would not, if I were you, be dispirited by the failure of the Conference on Austria and Germany which is coming in November. I do not think we are in for some violent clash, violent failure, breakdown. I think we are at the beginning of a long period, a very difficult period, in which we need all our efforts to prevent this Iron Curtain in the middle of Europe becoming an absolute barrier. I believe this can be done, provided the opportunity is used to lay the foundations of economic recovery in the West.

DISCUSSION

FIELD-MARSHAL LORD WILSON OF LIBYA: I would like to ask the Lecturer why, with all the latent hatred of Germany in Poland, the Partisans who supported the resistance against Germany came to be liquidated?

THE LECTURER: Well, it is a long story. The Partisans were divided into those who welcomed the Soviet armies and those who opposed them; those who kept in touch with General Anders' Poles over here and those who accepted the new regime. Most of the Partisans were not liquidated at all. The best thing the Polish Government has done, before I was there, was to offer an amnesty to Partisans who had been opposed to them; and officials in the British Embassy which, as the Field-Marshal knows, is not exactly friendly to the present Polish regime, told me that the amnesty had been very fairly and honestly carried out. It had been a very great success. Groups of Partisans who were more bitterly anti-Soviet than they were anti-Germany, or equally had continued to resist the Government that had been set up in Russia during the War and which rules from Warsaw, were carrying on as bandits, wrecking trains, shooting people, and so on. The amnesty has brought to an end that particular kind of guerilla warfare in Poland. When I was there a large number of people who had fought against the present Polish Government were being given jobs, some quite good jobs. Poles over here who had not gone back easily after the War—I have the names and positions of some of them—were put into good positions in present-day Poland. When I was there there was a period of considerable tolerance and an obviously sensible effort to placate the largest part of the population. There was always the danger of another turn of the screw, a tightening down and more intolerance, but on the whole the Partisans who had been against the regime were giving up their arms and accepting the regime.

SQUADRON LEADER R. D. SHEARDOWN: The Russian outlook is materialistic, their theory disposes of man's spiritual existence and maintains that man's mind is a reflection of material existence. The belief is in a constant struggle for mastery between material forces leading to a sudden gain by one side; therefore the mind is open to striking revolutionary changes. Hence, a nation progresses by revolution and so must the World.

Thus Russia is convinced of a world struggle between material capitalism and Soviet socialism leading to sudden mastery of Soviet ideas; the belief that capitalism is decaying strengthens their convictions.

If we have an integrated economy in Western Europe on the lines of the Marshall Plan and without political strings attached, resulting in a resurgence of western capitalism, do you think that this revival will soften the Russian materialistic outlook and prevent their eventual intention of controlling the whole World as a result of that particular policy?

THE LECTURER: That, of course, is an admirable question which it is extremely difficult to deal with except in a very long answer. I think that Russian policy is based on a combination of factors. There are the old national geographical facts that led to Czarist expansion. The Russians want neighbours that are not hostile to them. The same security reason may also, no doubt, involve a desire for oil in Persia. It may mean a desire for an outlet in the Straits. Secondly, there is the belief—which is strongly held—

that the Soviet Union will be attacked sooner or later, unless they are very strong, by the capitalist world. Thirdly, there is the hope that capitalism will itself break down and that, in that case, it would be unnecessary to have an international war. They definitely hope—because they have suffered as no other country has—that there will not be a war. They certainly will not make war ; that I am absolutely sure of. I am not talking about what may happen in fifty years time. The whole of the West of Russia is flat on the ground. They know that the Americans have the weapons which they have not. They are unable to attack America even if they wanted to. If you ask me what will be Russian policy at some future period, I cannot say. I believe they go no further in their thoughts than the question of the American slump.

I forgot to finish what I was saying about Mr. Gomelko. I asked him about the slump and I said to him " When is it coming ? " and he said " I do not know at all. I cannot prophesy when it is coming." He obviously looks forward to it as the best hope that it would weaken America and make an American attack on the East less likely. I said, " Supposing America gets out of the slump, not by the old unemployment and readjustment and all the rest of it, but by putting its people into uniforms, by turning over its peace industries into war industries, by copying the technique of Fascism, as Hitler got over the German slump—what then ? " It may be an answer to your question to tell you his answer. He only said one thing ; he said, " Are you asking me whether there will be a third World War or not ? "

In effect I believe the idea that Russia would physically attack and precipitate a war to be a completely erroneous one. I can give you a variety of reasons, technical, idealogical, and every other sort. But they would certainly spread all over Europe if they were attacked by enemy bombs. That they might be prepared to make terms (indeed they did with Germany, God help them, in 1939)—if they met a World which, instead of disintegrated, as western Europe now is, was integrated, believed in itself and had a real economy—that they might then make some terms, I believe to be perfectly realistic and possible.

LIEUTENANT W. HUGWIN : You said, I think, that no eastern country wished to be dependent on dollar help. Did not Czechoslovakia say originally that she would attend the Paris Conference, and was she not prevented from doing so by Moscow ? Why was she so prevented ?

THE LECTURER : That is perfectly correct. Masaryk has been frank about it. The Russians first looked like going themselves, by the way. The Russians informed the Czechs that they did not want them to go, and, as several Czechs of a most western kind said to me, " We want to avoid having to choose between the East and the West. We are middle-class people. 80 per cent. of our trade has always been with the West, but if it comes to a choice between the East and the West, we are part of the Russian security zone. Russia is now our neighbour, our security against Germany. Russia is our Slav brother, etc., etc." The Czechs would like to have gone to the Conference in the hope that there was some dollar help to pick up, but they would not themselves have wanted to do it on terms which would have made their policy dependent on America.

LIEUTENANT-COMMANDER J. G. WELLS, R.N. : Would you say a few words about Russian activities in the Balkans from the point of view of the future of countries such as Greece and Turkey ?

THE LECTURER : It is awfully difficult to have questions which involve such a long story. I think the Yugoslav position is quite clear. Yugoslavia is now a proletarian Communist country working extremely hard, very anxious indeed for barter bargains—quite unwilling to allow any western influence to penetrate very far. The Czechs are much more western, of course, and if they get half a chance the Czechs would be culturally 50/50, and economically they would like to have far more trade with the West. I do not think that we are in a position any more to do what we did before the last war. I do not think we are in a position to take a powerful part in the Balkans, if that is your question. All those countries now are making trade arrangements between themselves. Just as

there are the Marshall proposals in the West, so there is something called the Molotov Plan in the East, and bargains and arrangements for closer trade which might ultimately lead to penetration under Communist auspices throughout that area are now being arranged. It is a long way from Communist penetration because the countries are extremely nationalist, but it is moving in that direction, and I do not think we have got an awful lot to say.

I must not start on Greece ; it is an enormous subject.

GROUP CAPTAIN C. E. CHILTON : I would ask two questions. Firstly, in giving us an account of Stalin's virtues you compare him with Henry VIII. Whatever virtues Henry VIII might have had, I wonder if he really compares with Stalin. You hold up Stalin as being something of a master-man who produced a wonderful economic machine in building up Russia without external aid, but I would like to know the number of Russians who died during the building-up of this economic machine ? Is it not a fact that millions died through the want of food during the very period they were exporting millions of tons of food to Europe ?

Secondly, as far as I know, the Russian technique is to foment, in other countries, an economic chaos which eventually calls in Russian assistance in some form or another. I would suggest that if Russia can see that the Marshall Plan for Western Europe can be prevented from achieving its ends—in other words, if the Marshall Plan does not come into fruitful effect and strengthen Western Europe—then Russia can rest content that this side of Europe will naturally turn to her for help. I would suggest that Russia is trying to keep the Marshall Plan out of Europe so that she can create chaos and so that her own forces can get " busy." I may be biassed in this view and you equally may be biassed the other way. But that, I suggest, is what most people in this country are thinking.

THE LECTURER : There is a kind of skin game going on between the West and the East. I would say that Marshall's original idea, as put forward in Marshall's original statement, is the right counter to this game of bringing chaos. It would mean creating hope and economic prosperity in western Europe. In that case Communism will not grow, and I think it is true enough that the Russians are afraid of any kind of building of western Europe as a repetition of the building of western Europe against them after the last war. They oppose it. I do not say anything contrary to what you have said. The right answer to Communism is the economic integration appropriate to western Europe.

On the business of the price that Stalin paid, again, that is exactly what I said. The price was absolutely appalling. I do not know how many tons of butter it was, or how many lives. I do not know how to put it plainer than I did. You have got to get out of your heads the feeling of moral censure if you want to appreciate the facts. I am not made and you are not made in the way in which Henry VIII or Stalin or Tito were made. We cannot say " This is a world objective which I am so sure about that I do not mind whether millions of people die or not." All I am saying is that when the historian writes the history, he may tell us of the astonishing achievements of Stalin, that he industrialized Russia without being dependent on foreign capital. He turned a nomadic primitive country into a world industrial Power which is now the second most powerful in the World. That is what he did. It is a big thing the Russians are doing. They are in an early stage of society which is intolerant to people who interfere with the initial stages of its growth. I will give you a very simple illustration of the question of toleration. We fought in this country a very mild Civil War in the XVIIth Century, so mild that in terms of this eastern European stuff it would not count at all. But it was 150 years before we gave full civic rights to the Catholics. To expect the partisans of Poland or the Bolsheviks of Russia to be tolerant to an opposition intriguing with foreign elements is just silly. They could not possibly be tolerant. They are just going through a vast revolution. There is no case in which a country is very tolerant in going through a vast revolution. We are a very tolerant people but, as I say, it took us 150 years.

MAJOR C. H. B. PRIDHAM: Is it not a fact that Moscow expects the collapse of western civilization because they are doing everything they possibly can to bring that collapse about by Communist cells in this country and in every other country too?

THE LECTURER: It has not been their policy since the War. It might change. For instance, French production has been remarkably high ever since the War—in the mines and in the factories, because the Communist Party has been leading all the production battles. The strikes in France have not been fomented—I know, and let me make it quite clear—by the Communists. The Communists have come along reluctantly and taken charge of them because they would have lost popularity if they had been led by other people. Of course, if there is a danger of their losing the leadership I have no doubt this policy would change. The person who has worked most hard for production in this country is Mr. Arthur Horner of the miners, who is a Communist. Of that there is no doubt whatever. I do not deny that there might come a time when Communist policy might change and they may try to sabotage production, but so far the orders have been to the other effect. Some of the Marxist anti-Communist people—called Trotskyists—have been troublemakers. The Communists have been all for production for a variety of reasons which I do not think I fully understand.

THE CHAIRMAN

I think the time has come to draw to a close. As the Lecturer has pointed out to us so clearly, we as a people really do not understand the mentality of those who have been through the sufferings of violent revolutions and have experienced the inevitable aftermath of bitterness and suspicion. We have listened to him with great interest and I myself go away with a much clearer idea of the mentality of these people who have suffered so much. I would like to express on your behalf our most grateful thanks to Mr. Kingsley Martin for his most interesting address. (*Applause.*)

AUSTRALIA'S EXPERIMENTAL ROCKET RANGE[1]

With the arrival of a German V2 rocket bomb at Port Adelaide and the rising of a new town at a range head in its empty North-West, South Australia has been given impressive evidence of the progress of the Empire guided-missile project concentrated on this state. It is only in its infancy, but people have seen enough to appreciate its magnitude and importance in peace, as well as war. Even those used to huge war expenditure have noted the estimate of £3,000,000 for the first section of the range, £12,000,000 for ancillary works, and an annual maintenance of £3,000,000.

No date has been fixed for the first firing. It may not be for three years, although progress of the last six months has given hope that the date may be nearer 1949 than 1950. However, scientific developments may intervene; experiments in supersonic aircraft have been added to the original scope of guided missile tests. Although the experiments probably will be predominantly with weapons of war, it has been stated officially that they may also have an important influence on the development of high-speed aircraft, first for the carriage of mails and then of passengers.

Progress since the arrival of Lieut.-General J. F. Evetts of the United Kingdom Ministry of Supply with a team of consultants and technicians, in January, 1947, has emphasised the urgency of the project. Collaboration between British and Commonwealth officials has been close and effective, and in spite of acute material and transport shortages the rocket range has had priority.

The spot first chosen for the range head was Mount Eba, a pastoral station and landing ground on the Adelaide-Darwin air line, and approximately in the centre of the southern half of the Continent. However, surveys showed difficulties of which the chief was water supply, and the site was transferred to a spot near Pimba, a tiny stopping place on the continental railway linking Adelaide and Perth, and about 120 miles North-West of Port Augusta, the nearest town and harbour. In a desolate tract about ten miles from the railway and on the rim of probably the biggest area of unsettled terrain in the Empire an Australian Army cartographic unit drove its pegs and gave the spot the name Woomera—an appropriate title, for the woomera is the short stick with which the Australian aborigine propels his spear.

The region might have been made for the purpose. Transport is adequate as Australian inland transport goes, and Adelaide's industrial facilities are not too far away. About the range head lie extensive salt lakes, although the term "lake" applied to the shallow salt pans of Central Australia is a courtesy title, and treacherous country useless for sheep or cattle grazing. To the West the monotonous Nullarbor Plain stretches into infinity, and to the North and North-West are deserts in the crossing of which Australian explorers wrote their greatest deeds. For hundreds of miles on either side of the border between Western Australia and South Australia is an age-old region of shifting dunes and rolling rivers of sand, sparsely sprinkled with mulga scrub and spinifex bush, and broken here and there by the worn-down cores of ancient mountain chains. It is a land as hard and arid as any in the World. One of the explorers called it an "immensity of desolation." Its only people are nomad aborigines, averaging perhaps one to every 200 or 300 square miles. In rare good seasons they venture into the waste for game and fruit-bearing shrubs, trusting to secret wells and rock pools to keep them alive. When the earth is drought-burned they retire to their Government reserves.

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[1] This article is reproduced from *The Manchester Guardian* of 6th December, 1947, by courtesy of the Editor of that paper and the author.

For the start the range will be of only 300 miles, and the main tests will be with rocket bombs; but as the scope of the experiments extends and discoveries and theories are tested the path will extend from Woomera, across the Great Victoria Desert, pass South-West of Lake McDonald, across the state border into the Kimberleys, and touch the Western Australian coast about midway between Carnarvon and Broome. Thence it will lie over the Indian Ocean. At intervals between Woomera and the coast will be observation stations in communication with the main observation and recording centre at the range head.

The path traverses part of the native reserve, and at the outset there was an outcry on the ground of danger to natives, not so much from missiles, but from the establishment of centres of white settlement on or near the reserves, and the knowledge that such centres are a fatal magnet to the native, leading to detribalization, decay, and eventual extinction. Opposition has been appeased by official assurances that the interests of the natives will be safeguarded.

Work has been accelerated in recent months. Several hundred R.A.A.F. men have been at Woomera since June. They have laid out and started building a town which eventually will house 500 men and their families—scientists, technicians, administrative staff, and construction gangs. Scores of prefabricated offices and huts have been moved from a war-time air training school at Port Pirie; three landing strips each a mile long have been prepared; a wireless station built; roads made; and water laid on. Later there will be schools, churches, and amusement centres.

The average rainfall at Woomera is less than five inches a year, but a few months ago abnormal falls placed enough water in depressions to last at least 18 months. Unless that is renewed, water will have to be piped from the Morgan-Whyalla main which takes River Murray water round the head of Spencer Gulf.

Plans also provide for a spur railway from the transcontinental line. For the present transport is by motor convoy.

The range has important associated developments in other parts of South Australia. Chief of these is the use of the Salisbury explosive factory, about eight miles from Adelaide and the biggest plant of its kind in the Southern Hemisphere. Built at a cost of more than £3,000,000 during the War, it covers six square miles and has nearly 4,000 acres of factory space. Last year the factory was being made over in sections to civilian production, but it has been taken over as an assembly depot, a factory for making rocket bombs and other secret purposes associated with guided missiles. Eventually several thousand men will work there.

Another war-time airfield at Mallala, about thirty miles from Adelaide, is a further link in the chain. The Australian Minister for the Air has announced that, to fulfil its purpose as an air base between Salisbury and the range head, it will be converted into Australia's largest aerodrome with runways long enough to take all present or envisaged aircraft.

The guided-missile project is one in which all the British Commonwealth is associated, and while Australia and Britain are most intimately concerned, the progress of the experiments will be followed as closely in Capetown and Ottawa as in London and Canberra.

THE DISARMAMENT OF THE GERMAN AIR FORCE

By GROUP-CAPTAIN B. S. CARTMEL, O.B.E., R.A.F.

AFTER the 1914-18 war, such a small portion of Germany was occupied that the great mass of people had no contact with the occupying forces, never saw any Allied troops and had no realization of the completeness of their defeat. Resistance to the authority of the Allied forces was not always met with firmness and, where justified, by prompt punishment. Civilians were not completely disarmed. The situation was to be somewhat different after the late war, for not only were the *Wehrmacht* and *Luftwaffe* utterly beaten in battle, German cities and industrial centres devastated by Allied bombers, but complete occupation of Germany was to take place.

The Terms of Surrender, insofar as they affected the *Luftwaffe* in the British zone, were issued on behalf of the Supreme Allied Commander by the Air Officer Commanding-in-Chief, Second Tactical Air Force. Space does not permit the recording of this interesting and historic document in full, but the following are one or two extracts to indicate the action which was to be taken by the German Air Force Commander:—

(*a*) All German and German-controlled aircraft, both Civil and Military, will be grounded immediately and removed clear of all runways and all strips. Their guns will be unloaded and their bombs removed.

(*b*) From each aircraft one of the essential aero-foil surfaces, e.g., rudder or elevators, will be removed.

(*c*) The propeller will be removed from all powered aircraft.

(*d*) All flying bombs will be immobilized by the removal of fuses, detonators and fuel pumps where practicable.

(*e*) Heavy and light anti-aircraft guns under the control of the German Air Force will be neutralized immediately by the removal of the essential parts of the mechanism.

(*f*) All small arms, including rifles and carbines, pistols, machine guns and knives, will be withdrawn from individuals, concentrated and safeguarded.

(*g*) All explosives (including bombs, ammunition, pyrotechnics, gas bombs and gas spray containers) will be concentrated and safeguarded.

(*h*) All airfields, landing grounds and seaplane alighting areas will immediately be cleared of obstruction and will, where necessary and so far as station resources permit, be made serviceable as quickly as possible and will be maintained in a serviceable condition.

The Terms of Surrender also covered balloon barrages, meteorological services, marine craft, war material located in factories, depots and the personnel therein, and documents.

The following account outlines briefly the part played by the Royal Air Force Disarmament Organization in enforcing the Terms of Surrender and ultimately in the final elimination of the German Air Force.

Plans for the occupation of Germany and the disarmament of the enemy's armed forces were originally formulated by S.H.A.E.F. and covered in H.Q. 2nd Tactical Air Force Air Staff Instruction ECLIPSE, but many problems still required solution when R.A.F. Disarmament Units began to move over into Germany in the Spring of 1945. My sympathies lay with those whose difficult task it was to provide

sufficient direction upon which to train both individually and collectively thousands of officers and airmen who were rapidly being drafted into our organization at a time when the air war in Europe was at its peak and R.A.F. Operational Commands could ill afford to release valuable and vitally needed manpower. The personnel themselves realized this too, which made our training all the more important and so very much more worth while if discontent and the natural uneasiness and restlessness of skilled and experienced men on being withdrawn from " Ops" were to be avoided. There were so very few instructors for this vital task, but it was essential that our Disarmament formations went into Germany properly briefed with a knowledge of the enemy, the political background of Nazi Germany, the organization of the *Luftwaffe* and the German aircraft industry, combat trained and offensively minded, and, what was most important of all, with a clear knowledge of what had to be done immediately on arrival, appreciating as we did that for the first two or three weeks communications would be poor or non-existent, conditions might be totally different from what had been anticipated during the planning stages; we were uncertain of what German reaction would be towards our occupation forces; and it was vital that control in its widest sense should be applied as soon after surrender as possible. We had been warned of German evasive tactics after the 1914-18 War, and we were determined they should not happen again. Combat training and the development of the offensive spirit were essential whether the occupation was to be peaceful or otherwise, for air warfare is an impersonal thing and does not leave a legacy of hate in the same way as warfare on land. Opposing air forces, particularly ground personnel, do not meet face to face, and at the end of six years of war very few of our personnel had ever seen a German airman except perhaps a P.O.W. or on a newsreel. Many of our men had never served overseas, and it was, therefore, essential to make them realize that, although the war might be over when they arrived in Germany, there would be no time for relaxation and sightseeing, for then their task would really begin and, if it was to be done properly, a moral as well as a physical superiority had to be established over the enemy. Students of the Control Commission School will remember the " Chamber of Horrors " in Viceroy Court and being encouraged to see the first films of Belsen and other Concentration camps. I well remember the grim satisfaction I felt after witnessing those pitiful sights that I was going to Germany to help in any small way I could to bring home to each and every German with whom I was forced to come into contact in the course of my duties, his personal responsibility for Nazism and the war which it had brought about and which he had now lost. I think every officer and man in our Disarmament Units felt the same way and, once that frame of mind and the necessary atmosphere had been created, we were certain of success. That was almost the greatest problem with which we had to deal. Students of the Control Commission School who, in the Winter of 1944-45, had listened as part of the syllabus to such lecturers as Lord Vansittart, Mr. Wickham Steed, E. J. Passant, Wallace Deuel, Lindley Fraser, Admiral Tottenham, R.N., and others speaking on Germany, and had spent six months making a study of this interesting subject did not doubt for one moment the importance of the work that lay ahead and the need for a specially-trained Disarmament Force.

The Force for the Task

Headquarters Staffs, Wings, Squadrons, Reconnaissance Flights, R.A.F. Regiment Units and Bomb Disposal Flights were finally deployed as follows :—

(*a*) Headquarters, 2nd Tactical Air Force (later Air Headquarters,

B.A.F.O., at Bad Eilsen and Bückeburg).

(*b*) No. 83 Group (Schleswig Holstein and Denmark).

(*c*) No. 84 Group (Hanover Province and Berlin).

(*d*) No. 2 Group (Westphalia and Rhine Provinces).

Disarmament units were also sent to Norway and Austria. Establishments were experimental throughout, and Staff and Unit organizations followed no orthodox pattern. They comprised in addition to representatives from every Branch in the Royal Air Force, Royal Artillery and Royal Army Ordnance Corps Officers for the control and disarmament of the German Flak organization; Air Formation Signals personnel to deal with the *Luftwaffe* landline and signals network; and subsequently Control Commission (Air Division) representatives for the disarmament and control of the aircraft industry. These officials superimposed their organization on our Disarmament set-up in order to build up their intelligence pictures and ultimately to relieve us of the responsibility for safeguarding industrial "targets." As our force contracted they moved their Headquarters alongside the respective Regional Military Governments. R.A.F. Works (Civil Engineer) officers joined us later for the disposal of buildings, plant, airfields, depots, and other units after all disarmament work had been carried out. In addition, the Royal Canadian Air Force provided the complete Disarmament Staff for Headquarters No. 84 Group, together with one Disarmament Wing, and they served in Germany until the end of May, 1946, when they were repatriated. The most cordial, co-operative and happy team spirit existed at every level and was in my opinion the main contributory factor to the success of our task.

Methods Employed

Before leaving the U.K., Disarmament Wings were issued with comprehensive intelligence maps and dosiers containing information regarding their respective zones of occupation showing airfields, bulk petrol installations, Luftparks, ammunition depots, aeronautical factories, Flak sites and so on. But as those who have experienced a major withdrawal in war know only too well, such information could only be regarded as a foundation upon which to build, as the German Army and Air Forces in May, 1945, were in such a state of chaos and confusion owing to their rapid and prolonged retreat, changes of location of Units, movements of aircraft including the arrival in Schleswig Holstein and Denmark of aircraft from the Russian front and Norway, high casualty rates, dispersal of material and stores to an unbelievable degree to avoid detection and destruction by our Tactical Air Forces, that "Square Search" methods had to be adopted to locate the remnants of the *Luftwaffe* in order to build up our intelligence picture and to cross-check the information given to Headquarters 2nd Tactical Air Force by the German Air Force Commander in response to the orders under Section II of the "Terms of Surrender." This included such items as:—

(*a*) Locations of all operational units, together with types and numbers of aircraft in such units.

(*b*) Outline of the organization for air defence, including fighter defences, flak defences, meteorological service, balloon barrages, fighter control and aircraft safety organization.

(*c*) The general plan of administration and supply of the German Air Forces, including major depots and parks of all kinds and major routes of communications.

(*d*) Details of all telecommunications (including radar), both military and civil, of the German Air Force (including all para-military organizations) down to and including Airfield Regional Commands.

(*e*) Details of liquid fuel (including diesel oil)—stocks of 50 tons or more, specifying approximate extent and nature of holding.

(*f*) Details of all experimental, research and development establishments specifying locations . . . and so on.

The greater part of this task fell to the three Wings in the 83 Group area, for it was on the airfields in Schleswig Holstein and Denmark that the remnants of *Luftflotte Reich*, which had finally opposed 2nd Tactical Air Force and 21 Army Group, were grounded when the Germans surrendered. Well over 3,000 aircraft were captured, mostly operational or transport types. The ground organization, personnel, explosives and equipment necessary to support such a force can well be imagined and will serve to illustrate the magnitude of the task which faced the three Wings and eleven small Disarmament Squadrons in this area. Many Units North of Neumünster were taken over with their staffs more or less complete, such as the Munitions Depot at Kröpp; the Radar Depot, Suderbrarup; and the Luftpark, Vingsted, in Denmark. These remained under R.A.F. control until the disarmament task in their units was complete. Ex-*Luftwaffe* personnel were ultimately deployed according to their trades in all our targets, and during the peak period over 8,000 Germans were frozen in 83 Group's area alone.

That our Units experienced nothing but genuine willingness from the Germans to co-operate and to carry out orders I attribute to the fact that in highly technical services skilled personnel undoubtedly subdue temporarily their national prejudices when absorbed in discussing, investigating and demonstrating devices and contrivances such as glider bombs, radar transmitters, new designs of jet engines or experimental or unusual types of aircraft. I have already suggested that air warfare breeds no real legacy of hate among air force personnel, especially when they are compelled to work in such close proximity as they did in our Disarmament units. In spite of this, however, the non-fraternization ban was strictly and rigidly enforced. I well remember flying on a test flight in July, 1945, in a Special Siebel 204 which one of our Units was preparing for Prince Bernhardt of the Netherlands. The pilot, an experienced operational Squadron-Commander, knowing little of this type of aircraft, ordered the German N.C.O. who had been directly responsible for the work to " give him dual " from the navigator's seat. Two German aero fitters enjoyed the flight in the cabin with me until the starboard engine began spluttering and we had to return to base. The flight over, strict formalities were resumed, the trouble was diagnosed and the German fitters immediately set about effecting the necessary adjustments under the supervision of an R.A.F. N.C.O.

The above incident, insignificant though it was, gave me food for thought as did the case of the German pilot who was ordered to ferry a J.U.52 transport aircraft from an airfield in Denmark to Fuhlsbüttel near Hamburg. He was escorted by a Spitfire which developed engine trouble en route and managed to force-land on a nearby airfield. The German circled round until he saw the Spitfire safely down, then he flew on to his destination and made his report.

What was it that prompted so many disbanded German airmen to return to their late Disarmament Units? Perhaps the same reason that caused an ex-Oberst to turn out his *Dienstgruppe* Unit to form a " Guard of Honour " for the departing Commanding Officer of an R.A.F. Disarmament Wing under whose orders he had

served for over a year. Discipline? Ignorance? Sentiment? Possibly that indefinable spirit of chivalry that has always existed between those who fly? Or was it just the dawn of realization that the British way of life offered hope for a new Germany where the principles of honesty, good faith, courage, co-operation, hard work and unselfishness might find full scope? I wonder?

To elaborate in detail the methods by which we achieved our results would be tedious to the reader, therefore I append a resume only showing the main tasks to which we directed our Wings, Squadrons and Reconnaissance Flights :—

(*a*) Constant searching for, concentrating and securing aircraft and material, until we were satisfied that as far as humanly possible we knew where everything was, i.e., to ensure that the Terms of Surrender had been complied with.

(*b*) The transfer of over 2,000 tons of equipment to experimental establishments in the U.K. for technical intelligence, trial and research.

(*c*) Repair, preparation and allocation of "reparations" aircraft and equipment to France, Denmark, Holland and other Allied Nations. The French alone received over 400 aircraft, 2,000 spare aero engines and 3,000 tons of aeronautical material. To assist in this latter task, a French Air Force unit was installed on Leck airfield, North-West of Schleswig, to which were flown by R.A.F. and German pilots Storch, B.U.181, AR.96, M.E.108, S.I.204, J.U.88 and AR.396 aircraft for overhaul, flight testing and ferrying to France by French pilots. A similar arrangement was made at the flying boat Station List on Sylt for the transfer to France of a number of J.U.52 seaplanes.

(*d*) The transfer to the United Kingdom of about 200 experimental type aircraft in conjunction with C.O.E.F., Farnborough. For this task Headquarters 2nd T.A.F. allocated to us an R.S.U. (Repair and Salvage Unit), to which we attached German tradesmen appropriate, as far as practicable, to the types of aircraft selected by A.T.I. (Air Technical Intelligence) teams for transfer. No praise is enough for that handful of skilled pilots who safely flew home land and seaplanes of unknown history; which had been "weathering" indefinitely in all climatic conditions; with engines of doubtful life; without wireless because no German sets existed and the fitting of British sets was impracticable. The latter necessitated contact flying and in certain minimum weather conditions. One such experimental aircraft cost the life of the C.O.E.F. (Commanding Officer Experimental Flying) later in England; many other minor "incidents" never became known other than to those intimately concerned.

(*e*) The disposal and destruction, as applicable, of all A.A. guns, searchlights, barrage balloons, predictors, radar, flak ammunition, and other equipment comprising the very extensive German flak organization.

(*f*) In co-operation with the Army and Royal Navy the dumping at sea of all bombs, explosives and chemical weapons which were safe for handling, and the destruction by qualified bomb disposal personnel of all doubtful and unserviceable enemy explosives. The manual work was always carried out by Germans.

(*g*) The disbandment of all *Luftwaffe* personnel and their disposal into other Group areas, into labour and airfield construction units, into the mines, into agriculture, and elsewhere in conjunction with the British Army. Over 60,000 G.A.F. personnel were captured in 8302 Wing's area alone from which about 8,000 Germans were "frozen" to work under orders of the Disarmament

Units in 83 Group on technical, bomb disposal, identification, movement, destruction, salvage and other duties.

(*h*) The identification, recording, segregation and safeguarding of all *Luftwaffe* aircraft and material until all disposals had been completed, and thereafter the reduction to produce of the remainder. This resulted in over 50,000 tons of scrap and raw materials of every category being handed over to the Reparations, Deliveries and Restitutions Division of the Control Commission for ultimate use in industry, together with 5,000 tons of material of potential civil use. Equipment and other material of a " required category " were cleared by Disarmament Units into Air Disarmament Disposal Parks at Bergedorf near Hamburg, and Delmenhorst near Bremen, for allocation to Allied Nations as directed by Air Headquarters, B.A.F.O.

(*j*) Constant Security patrols of Squadron Sectors to ensure " evasions " were not taking place, to round up suspected persons, to " show the flag " generally and to assist the Army in the maintenance of law and order in outlying districts. As an example, No. 8401 Wing patrolled 80,000 miles of the Southern half of Schleswig Holstein during the latter three weeks in May, 1945, on such duties.

(*k*) Research into and control of the *Luftwaffe* Ground Signals network and the allocation of switchboards, cables, telephones and other " Common-user " equipment to Military Government for the rehabilitation of areas where this network had been destroyed.

(*l*) The clearance of all " required " aircraft and material from Denmark into concentration points in Schleswig Holstein and the destruction of the remaining operational-type aircraft, explosives unsafe for dumping at sea, and lethal weapons, before the withdrawal of the Disarmament Units. The residue was handed over to the Danish Government through the Allied Mission in Copenhagen.

(*m*) The reception and ultimate disposal of a number of JU.52 aircraft and several hundred tons of ex-*Luftwaffe* equipment from Norway which had been despatched to Germany by No. 8801 Disarmament Wing before its departure to the United Kingdom.

(*n*) The collection and despatch of 1,000 tons of equipment to the Aeronautical College, Cranfield, England.

(*o*) The shipment to the United Kingdom of selected aircraft, flak guns and other equipment for historical purposes.

(*p*) The control of all *Luftwaffe* monies by " blocking " banking accounts in the various Kreis Banks. Financial control officers were established at all levels for these and other accounting duties.

(*q*) Locating, securing and listing all aeronautical industrial targets for ultimate examination by specialists from the Air Division of the Control Commission.

The above tasks speak for themselves and need no elaboration.

Reflections

For sixteen months we had been in the position to make a fairly detailed study of the ground organization of the enemy's Metropolitan Air Force. The standard of aircraft and equipment was on the whole good; airfields were well maintained

and strategically located, although a large number of them, such as Fassburg, Neumünster, Utersen, Kiel/Holtenau and Lüneburg, were grass-surfaced and, therefore, liable to become unserviceable in bad weather; the supply organization was satisfactory for a home-based "static" war; and reports state that German pilots and air crews were well trained and of high morale. I am not in a position to give opinions of German pilots regarding their own aircraft, but I understand they were well satisfied and confident with the aircraft with which they were operating in the latter stages of the War. It was, however, all too blatantly obvious that here were the remains of an Air Force which had never been able, by virtue of its composition, its relation to the *Wehrmacht*, and the restricted vision of its Nazi military leaders to apply in any serious and lasting measure the four main principles of air power :—

(*a*) To obtain mastery of the Air.

(*b*) To destroy the enemy's means of production and his communications in his own country.

(*c*) To maintain the battle without any interference by the enemy.

(*d*) To prevent the enemy being able to maintain the battle.

Here were the remnants of the Air Force that had allowed the B.E.F. to leave Dunkirk in 1940; which had been defeated by the R.A.F. in the Battle of Britain; which had ultimately been chased out of the skies in the Western Desert and throughout the entire Mediterranean Theatre; and which had been impotent to prevent the invasion of Normandy in 1944 and the end of hostilities in Europe in May, 1945.

Conclusion

The military object of the Control machinery was to ensure the complete disarmament of Germany; the elimination of the German military machine, including all para-military organizations; the demilitarization of the German police; the acquisition of such information desired by the occupying Powers as the Control Commission was instructed by the appropriate authorities to obtain; the adequate disposal of military fortifications, plants and installations, of war material and factories or parts of factories engaged in the manufacture of war material; and in general to reduce the war potential of Germany to the lowest practicable limit consistent with the political and economic policy adopted towards Germany by the United Nations.

In December, 1945, when air disarmament was at its peak, about 11,000 men were employed on *Luftwaffe* technical disarmament; air technical intelligence; personnel disbandment and control; flak elimination and disposal; bomb disposal, and R.A.F. Regiment patrols and guards. This included the Wings in Denmark, Norway and Austria and the special Flight in Berlin. By 31st August, 1946, the last of the Squadrons was disbanded and "Disarmament" as such was over.

The physical work of disarmament and disbandment, including the elimination of the Flak organization, had taken only sixteen months, and after August, 1946, there only remained the task of destruction of the remaining explosives by Bomb Disposal personnel; the handing-over of airfields to the Control Commission; and the preparation of official histories.

Such a brief and cursory review, mostly from memory and with the help of one or two old notebooks, cannot possibly do justice to those who planned this gigantic task in S.H.A.E.F. in the Autumn of 1944; to those who were responsible for training the personnel in the United Kingdom mentally, physically and,what was more impor-

tant than both, psychologically, for a task without parallel in the history of the R.A.F.; to those who formulated policies under conditions of extreme difficulty and sometimes delicacy; and finally to those in the Squadrons who by their energy, initiative and whole-hearted co-operation not only with one another, but also with the Royal Navy, Army, Allied Air Forces (American, French, Danish, Dutch, Norwegian and Belgian), and, in the final stages, with the Control Commission, all helped in their respective ways to complete the task so gallantly commenced by "The Few" in 1940—the complete and final elimination of the *Luftwaffe*.

THE BRITISH SEA-MINING CAMPAIGN, 1939-1945

By CAPTAIN J. S. COWIE, C.B.E., R.N.

On Wednesday, 3rd December, 1947

AIR MARSHAL SIR ROBERT SAUNDBY, K.B.E., C.B., M.C., D.F.C., A.F.C., in the Chair

THE CHAIRMAN: We are fortunate this afternoon in having here to give us this lecture Captain Cowie of the Under-Water Weapons Department of the Admiralty.

During the War I worked a great deal with Captain Cowie who served, I think, almost the whole war in the Mines Department of the Admiralty. I was in Bomber Command for four and a half years, and we had a big job laying the innumerable mines which his department produced and putting them where he told us they should go. I think nobody—and I weigh my words carefully—knows more about the sea mining story than Captain Cowie.

LECTURE

DURING my life-time, the mine has played an increasingly important part in three wars, and it is my purpose to tell you something about the operational aspect of mine warfare, with particular reference to the nature and scope of the campaign of 1939-45 and to the results achieved in that campaign.

NATURE OF MINE WARFARE

First, it is essential that we take account of the peculiar nature of mine warfare as a whole. In the normal course of human conflict we are all familiar with the idea of hurling objects at our opponents or of dropping objects on them from a height. Such things as shells, bombs, torpedoes, depth-charges and so forth are, however, all *aimed missiles*, directed at a specific target. Their effective employment is a matter for the Captain of the ship or aircraft from which they are launched, and he in turn is assisted by officers and men skilled in the management of various crystal-gazing devices whose design is directly related to the tactical purpose in view.

Not so the mine, or more properly the mine-field, which in the majority of cases is a long-term static weapon laid in accordance with a pre-conceived plan, *and to which the enemy himself must come if he is to be sunk or damaged*. It is thus only in exceptional cases that the officers and men of a minelayer (in which term I include, of course, the minelaying aircraft) can exercise their individual skill in deciding where the mines are to be laid. Their contribution to success normally lies in the display of accuracy and guts in getting to the position ordered and laying their mines unobserved.

These peculiarities of the minefield have several important repercussions.

In peace time, the mines themselves can be improved and developed from the technical point of view, and minelaying can be exercised in the parochial sense of dropping them into the water. But mine warfare, in the full sense of the term, can not be exercised, as it is impossible to simulate either the strategical, the economic, or the political factors. There thus arises a tendency in peace practices for mines to be laid by the simple expedient of drawing red areas on the charts, and I will not disguise from you that the lethal value of such minefields is solely determined by the relative seniority of the owners of the red pencils.

NOTE.—This lecture is based on extracts from a book by the Lecturer, provisionally entitled *Mines, Minelayers, and Minelaying*, to be published by the Oxford University Press.

In war, there is more often than not a time-lag between the laying of a minefield and the achievement of concrete results, and a still further delay in the receipt of reliable intelligence about those results. Furthermore, a minefield can achieve its object without actually sinking any ships at all, and so those responsible for the planning of a minelaying campaign have some difficulty in establishing whether the policy being pursued in any given area is correct or not.

Finally, the mine is to all intents and purposes incapable of distinguishing between friend and enemy. It follows that the safety and the freedom of action of one's own forces, and the requirements for future operations, are matters of paramount importance in the planning of a minelaying campaign.

Prior to 1914, Great Britain regarded the mine as being of little value to a Power having command of the sea, and there was in addition a marked tendency to stigmatise it as a somewhat ungentlemanly contrivance. The experience of 1914-1918, however, coupled with a steady decline in the international value of gentlemanly behaviour, tended to redress the balance. So in 1939 we had some cut-and-dried plans for minelaying, both in enemy waters and for protective purposes; we had some modern mines and minelayers with which to implement those plans; and we had a production and supply organization capable of comparatively smooth and rapid expansion.

Object of the British Minelaying Campaign

Viewed superficially, the object of a particular minefield may well be to endanger a particular type of ship, but the object of a minelaying campaign must be stated more broadly if its full significance is to be appreciated. We took this object to be :—

> " To contribute to the security of Allied sea-communications by the destruction or threat of destruction of the naval forces of the enemy, and to assist to the maximum possible extent in the dislocation of the enemy war effort."

The words " contribute " and " assist " are of importance. A minefield is normally an *adjunct* to the operations of other forces, and it cannot present an impenetrable barrier to a determined enemy. In any given theatre of war the minelaying policy must not only be related to the main strategy in that theatre, but must form an integral part of it. Minelaying, in short, is a means to a strategical end, and not an end in itself.

Policy

Our broad policy to achieve this object was two-fold :—

(*a*) The laying of a small number of large protective minefield systems in publicly declared areas in our own waters, with a number of associated deep anti-U-boat fields whose existence was *not* declared.

(*b*) The persistent and widespread laying of comparatively small fields in enemy waters. For reasons upon which I shall enlarge later, the effective lives of many of these latter fields were artificially restricted.

RESOURCES

I wish to spare you the consideration of abstruse technical details, but unfortunately mines do not grow on trees and just fall into the water when ripe. Although no doubt familiar to many of you, I feel it essential to remind you of some of the more important technical factors.

MINES

Mines are of three main types :—

Buoyant or Moored.
Ground.
Drifting.

The *Buoyant* mine, which you see in Diagram I, is the type known to every schoolboy. It can either be " Contact," that is it goes bang if hit by a ship, or it can be " Non-Contact," in which case it detonates on the near approach of a ship due to some property of that ship, i.e., magnetic, acoustic, etc. A disadvantage of the Contact type is that it " dips " in a current, so that under certain conditions a ship which would otherwise have struck it may pass over it in safety. If the mine is of the Non-Contact type, the ship may of course still be endangered under these conditions.

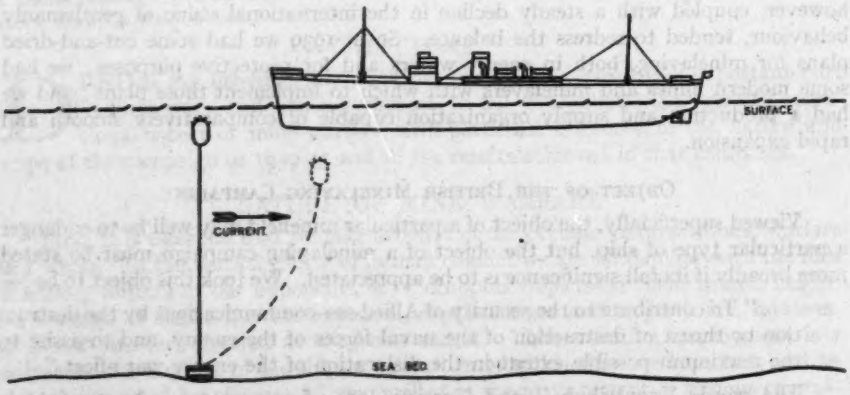


DIAGRAM I

The *Ground* mine remains permanently on the bottom of the sea, and must therefore always be of the Non-Contact type. Clearly, there is a balance to be struck between such factors as the weight of explosive, the sensitivity of the mine-actuating mechanism, the overall weight, the depth of water, and the type of target attacked. We found it worth-while to lay ground mines with an explosive charge of about 800 lbs. in depths of water up to 25 fathoms, or 150 feet. It will be more appropriate to consider the inner workings of the Non-Contact Ground mine at a later stage.

Drifting mines are adequately described by their title. They have a specialized application, and in many areas are apt to prove more of an embarrassment to oneself than a menace to the enemy.

On the outbreak of war we had good stocks of modern Buoyant Contact mines, capable of being laid in depths of water up to 1,000 fathoms, or one mile, and small stocks of Buoyant Non-Contact mines of the magnetic type. We were just going into production with Ground mines of the magnetic type, and I might perhaps digress here for a moment to emphasize the fact that the magnetic mine was not, as popularly supposed, a German invention. We had laid mines of this type ourselves in 1918, and it is of interest that the German mines laid in 1939 operated on much the same principle, but we ourselves had discarded it in favour of something better about ten years before the War.

Minelayers

For minelaying in our own waters we employed a variety of craft, either war vessels or converted merchant vessels, train ferries, and car ferries, according to the nature of the operation, and the plans and necessary material for the conversion of these latter craft were in existence before the outbreak of war. A list of the principal minelayers is shown in Table " A." (See page 34.)

For laying in enemy waters, the power of evasion, due to high speed, small silhouette, or ability to submerge was considered to be of more importance than actual mine-carrying capacity. It is true that the development of radar made it progressively more difficult to lay mines unobserved, but this was largely off-set by ingenuity in the design of the mines themselves, the object of which was to make them more and more difficult to sweep.

Four *fast minelayers*—the " Abdiel," " Latona," " Manxman," and " Welshman," were under construction when the War broke out. These ships, with a designed speed of 39 knots, a load of about 160 mines, and a comparatively small silhouette, did excellent work, but it is with some feeling that I recall that their general lay-out also made them irresistibly attractive to those wishing to arrange for the urgent conveyance of special personnel or stores by sea.

Three flotillas of modern *destroyers*, designed for rapid conversion to minelaying duties, were also available, but in the event we only employed six ships for the purpose—the " Express," " Esk," " Ivanhoe," " Intrepid," " Icarus " and " Impulsive," each carrying 60 mines. These formed the 20th Flotilla, and operated with success in the Heligoland Bight, in Norwegian waters, and off the Dutch and French coasts.

As the War progressed, various *Coastal Force craft* were adapted to lay both ground and buoyant mines, and in spite of the small numbers carried were of great value in the restricted waters off the Dutch and French coasts. Some of these craft were manned by the Royal Canadian Navy, and some by the Royal Norwegian Navy.

We also had six *submarine* minelayers available—the " Porpoise," " Seal," " Grampus," " Rorqual," " Narwhal " and " Cachalot," with a capacity of 50 buoyant mines each: the first craft to be specifically designed and built for the Royal Navy as minelayers. Being able to carry out their own reconnaissance, and requiring neither escort nor support, they provided the exceptional case in which the Commanding Officer could sometimes exercise his individual skill in the placing of the minefields.

It was, however, the development of *aircraft* as minelayers that had the most important effect on the campaign in enemy waters. Not only could they revisit areas already mined and keep them " sweetened-up," but they could penetrate to areas inaccessible to any other type of minelayer. As a result, waters otherwise dominated by the enemy were rendered far more vulnerable to mining attack than had been the case in 1914-1918. In the course of the War mines were laid by about a dozen different types of aircraft, the number of mines carried ranging from one to six.

Production and Supply

Viewed externally, a mine is rather an uninspiring object, but inside it is slightly more complex than the average domestic wireless set. Thus, although bombs can suffer almost untold indignities in handling and storage, mines require expert assembly and preparation. Moreover, as you are well aware, production cannot be

turned on and off like a tap. None the less, we ended the War with almost precisely the same number of mines that we started out with, having produced and laid over a quarter of a million in the interval. All I wish to emphasize here is that questions of design, trial, development, production, inspection, storage, assembly, preparation, and supply all form part of the *operational* side of a minelaying campaign, and that they cannot be ignored by the Staff at any stage of the proceedings.

Those involved in this process were :—

(*a*) The Director of Torpedoes and Mining, under whose direction the mines were designed by the Mine Design Department in the Portsmouth area and tried out in conjunction with H.M.S. " Vernon."

(*b*) The Director of Armament Supply, responsible for the production, storage, transport, and preparation of the mines.

(*c*) The Chief Inspector of Naval Ordnance, responsible for the inspection of the mines and their components.

(*d*) The Minelaying Section of Operations Division of the Naval Staff, responsible for the general planning and co-ordination, formulation of requirements, etc., in close collaboration with the Director of Naval Intelligence, the Director of Minesweeping, the Director of Operational Research, and the Director of Economic Warfare.

PLANNING AND ORGANIZATION

Before any proposal to lay mines could be implemented, the following factors generally had to be considered :—

(i) What was the purpose of the minefield ?

It was essential, as always, to be clear about the object.

(ii) What were the technical and supply considerations ?

(iii) Were any other interests involved ?

For example, we deliberately refrained from laying mines dangerous to enemy E boats in the southern part of the East Coast Barrage in order to ensure the freedom of movement of our own Coastal Forces and air-sea rescue craft.

(iv) Would the conduct of future operations be prejudiced in any way ?

In our own waters, this question presented little difficulty. In the case of minefields in enemy waters, however, it was a matter of the utmost concern. Such minefields, once laid, become the property of the enemy, and he can do what he likes with them. That is, he can sweep them up, or sweep a channel through them, or divert his traffic round them, or leave them to form part of his own defences. From the point of view of those who lay them, therefore, the effective lives of these minefields is as of just as much importance as their position. By being able to pre-set the lives of the mines when required, we at least retained some control of the situation, but from the psychological point of view it was of course a hard thing to ask people to risk their lives in laying mines whose period of lethality was deliberately restricted. I can however say, without hesitation, that both the scope and the effectiveness of the campaign in enemy waters was directly attributable to our ability to do so with accuracy.

Now a word about Organization. When all the foregoing factors had been resolved and a broad plan drawn up at the Admiralty, the issue of the detailed orders and the actual conduct of the individual operations rested with the Commanders-in-Chief or the Senior Officers concerned. With regard to minelaying operations by

aircraft, the link in the early days of the War was through Coastal Command, but from early in 1942 it was through Bomber Command. This was a very logical step, as Bomber Command were not only taking the main weight, and had the aircraft capable of long-distance minelaying, but their whole organization was attuned to the conduct of strategic operations and to the co-ordination of the minelaying with their bombing activities, of which it formed about 10 per cent.

There was at Headquarters Bomber Command a Captain, R.N., with a small naval staff, and naval officers were attached to the Staffs of the Air Officers Commanding each of the Groups engaged in minelaying, also naval Torpedo Gunners Mates were drafted to assist in the preparation of the mines. The latter were designed, produced and supplied by the Admiralty, by whom the broad plans were drawn up as for minelaying by naval forces.

An extremely close and happy liaison was established, for which, if I may be permitted to say so, our Chairman to-day was largely responsible, and I should like to pay tribute not only to the Air Staffs, but also to the air crews, who displayed such skill and determination in the performance of an unaccustomed role, and to the Royal Air Force Armament Staffs, who dealt with a great variety of strange devices in a most efficient way.

Having dealt with our resources and with the organization for making use of those resources, I now turn to the operations themselves.

NATURE AND SCOPE OF THE OPERATIONS

The chart shows the areas in which British mines were laid in Home Waters and the Mediterranean. In presenting it, I am aware that I lay myself open to a charge of adopting the " red-pencil " technique to which I referred earlier. There is, however, no other simple method of illustrating the extent of our activities, and I would therefore merely remind you that the red areas do not represent solid blocks of mines, but simply those areas in which mines were laid with varying degrees of density.

I propose to deal first with the minefields laid for protective purposes. The honour of laying the first mine of the War fell to the " Plover "—a coastal minelayer with a capacity of 100 mines. On the afternoon of the day on which war broke out, she began a minefield in the Firth of Forth, completed it the next day, and proceeded to Dover to take part in the laying of the cross-Channel Barrage.

This latter enterprise, planned in great detail many months before the War, was begun on 11th September, 1939, some days ahead of schedule, and completed with great rapidity by the " Adventure "—a minelaying cruiser laid down in 1922 (capacity 280 mines), the converted train ferries " Hampton " and " Shepperton " (capacity 270 mines each), and the " Plover." At the same time the French laid mines off Dunkirk. It must have been obvious to the enemy that we should lay a barrage in this area, but it seems probable that they were surprised by the speed with which it was done. Two U-boats were mined and sunk in October, 1939, and from then onwards little attempt appears to have been made to pass them through in any numbers. The fall of France defeated the purpose for which the barrage was originally laid, and although it was reinforced from time to time as the War progressed, this was done as an anti-ship rather than an anti-U-boat measure.

The next large undertaking in home waters was the laying of the East Coast Barrage, begun in May, 1940, and steadily progressed by the " Teviot Bank "—a merchant vessel converted to carry 280 mines, the " Princess Victoria "—a converted L.M.S. car ferry (244 mines), the " Plover " and the minelaying destroyers

of the 20th Flotilla. This force was subsequently joined by the " Willem van der Zaan "—an extremely efficient little Dutch ship of similar type to the " Plover," with whom she carried out many operations. Previous to the laying of the barrage proper, a number of deep anti-U-boat fields had been laid off the Thames Estuary by the " Princess Victoria," the " Hampton," and the destroyers; and the " Adventure " had laid deep fields off Flamborough Head.

In July, 1940, the laying of an extensive system of minefields was begun between the Orkneys and Iceland. The original plan had been to lay a barrage between Scotland and Norway, as in 1918, and five merchant ships had been taken up, converted and formed into a squadron under a Rear-Admiral. These were the " Southern Prince," " Port Napier," " Port Quebec," " Agamemnon," and " Menestheus," with a total capacity of 2,600 mines. Owing to the magnitude of the undertaking, special production and supply arrangements were called for, and a minelaying base was set up at Kyle of Loch Alsh on the West coast of Scotland. The invasion of Norway rendered the original plan abortive, and it was decided to switch the line of the barrage to run between the Orkneys and Iceland. In taking this decision, it was realized that the mines could offer no more than an additional hazard to the passage of U-boats, and in fact this was a system of minefields laid in a large area of deep water, and not a barrage in the accepted sense of the term. It also, of course, exercised a restrictive effect on the movement of German heavy ships.

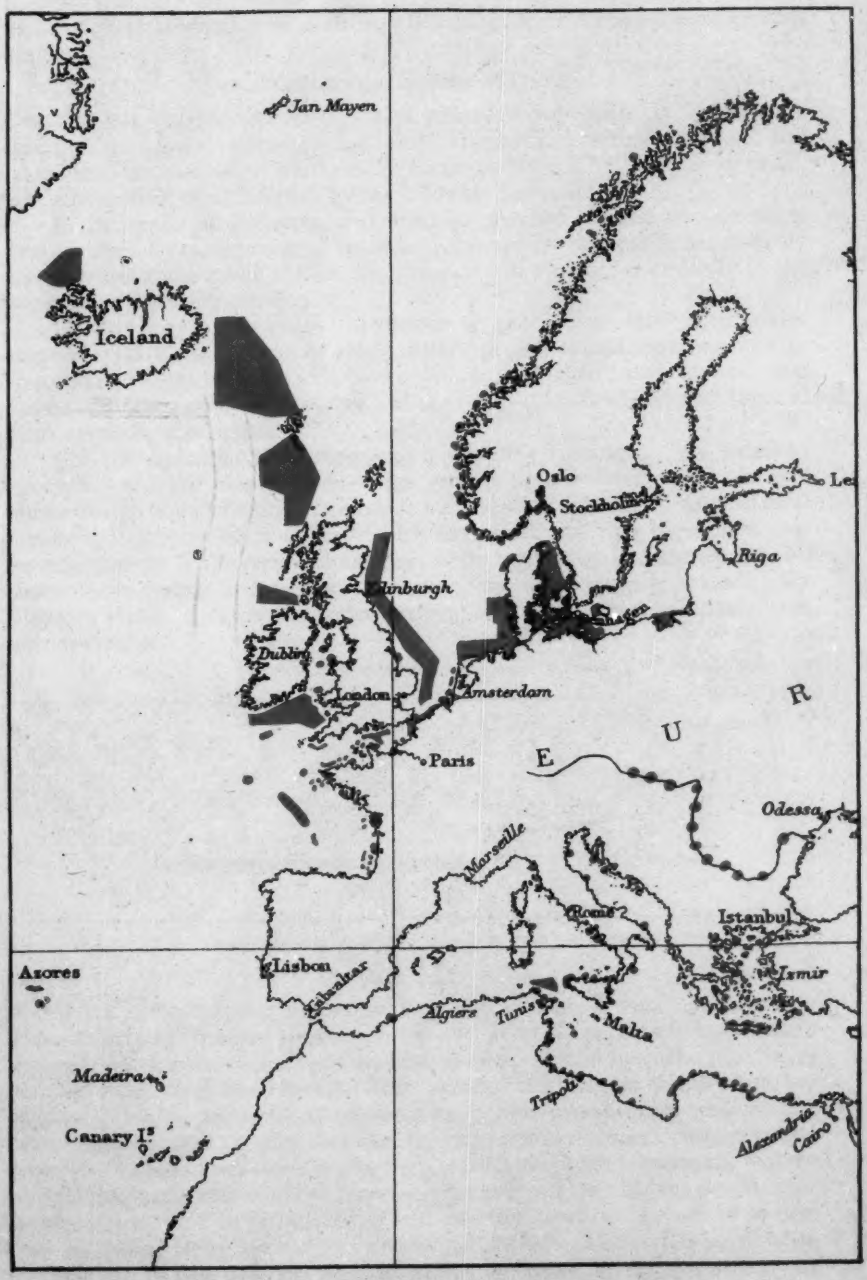
In August, 1940, a series of minefields was begun between the coast of Cornwall and the territorial waters of Eire, the first operation being carried out by the First Minelaying Squadron and subsequent lays by the " Adventure " and the " Plover." Originally intended as an anti-invasion measure, the character of these minefields changed as the War progressed, and deep anti-U-boat mines were subsequently laid.

Three large systems of deep anti-U-boat minefields were laid in addition to the smaller fields to which I have referred. The first, laid in 1940 by the First Minelaying Squadron, was under or in the vicinity of the shipping routes in the North-Western approaches to the Irish Sea. The second was laid to the North of Cape Wrath to cover the shipping routes to the South of the Orkneys-Iceland minefields, and the third was laid between Portsmouth and Cherbourg in the closing stages of the War by the " Plover " and the " Van der Zaan," while at the same time smaller groups of deep mines were laid by the Fast Minelayers in the approaches to the Irish Sea.

Other protective minefields included those off Hong Kong and Singapore, laid by the local defence destroyers in accordance with pre-war plans, reinforced later off Singapore by these ships and the " Teviot Bank," and a deep minefield laid by the latter ship in the Straits of Bab-el-Mandeb. The Australian minelayer " Bungaree " also laid many mines in Australian, New Zealand and New Guinea waters, the mines being produced in Australia.

In all theatres of war, about 185,000 mines were laid for protective purposes in 340 separate operations of a most unspectacular and slogging nature. Although several enemy surface vessels and a number of U-boats were sunk on these minefields, their effectiveness must chiefly be judged by the degree of protection afforded to our own and Allied shipping. Purely as an anti-U-boat measure, the deep " trap " minefields laid in the vicinity of convoy routes proved the most effective. This was undoubtedly because they really represented an offensive use of the weapon as a direct adjunct to the operations of mobile anti-submarine forces.

I now turn to the campaign in enemy waters, and I do so with some relish, for although the operations themselves may have been of an equally unspectacular



MINES LAID BY BRITISH AND DOMINION NAVIES IN THE 1939-45 WAR

nature, a certain atmosphere of romance may be said to have informed the proceedings as a whole.

The Campaign in Enemy Waters

Our aim was to endanger enemy ships wherever they might be legitimately attacked; to stretch their minesweeping effort to the limit of material, physical, and mental endurance; and in general to make things as difficult for them as we could. These things we tried to accomplish by the following methods:—

(i) By spreading our favours as much as possible. In this we were aided first by the increasing length of coast-line occupied by the enemy, secondly by the increase in the range and carrying capacity of aircraft, and thirdly in the numbers available for minelaying.

(ii) By laying "mixed bags" of different types of mines. Nothing infuriates minesweepers more than to be confronted with a minefield requiring four or five different types of sweep to cope with it, plus a "joker" they have not met before. By the end of the War we had used over a hundred different types of mine-actuating mechanism.

(iii) By exploiting the enemy's own sweeping technique. An excellent example were the *Sperrbrechers*—large enemy vessels fitted with powerful electro-magnets and designed to explode our magnetic mines at a safe distance. By using a proportion of mines of such low sensitivity that they could *only* be exploded by a *Sperrbrecher*, and then when practically underneath her, we succeeded in sinking no less than 31 of these ships and damaging 77 more. We played a similar trick on their minesweeping aircraft, of which a number were also destroyed.

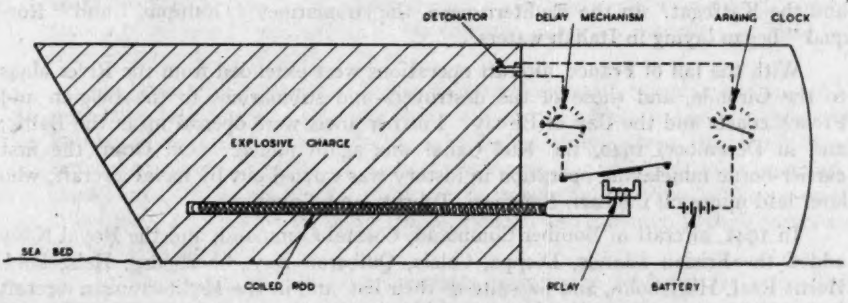


DIAGRAM II

(iv) By the inspired use of such things as Period Delay Mechanisms, Delayed Arming, Delayed Release, and so on. It would perhaps be appropriate for me to interpolate here a brief description of the British magnetic mine in its simplest form. (See Diagram II). The "secret," if it may be so described, lay in a rod of highly permeable alloy round which were wound many turns of fine wire. The passage of a steel ship over the mine induced a small current in this wire, which closed a relay switch and so completed the circuit between the battery and the detonator and exploded the mine. As you will see, there were two other breaks which could be introduced at will into the detonator circuit. The first was the Period Delay Mechanism, which could be set so that a varying number of ships had to pass over the mine before the detonator circuit was closed, and the second was the Delayed Arming Clock which could be set in hours, days, or weeks to regulate the time at which the mine became active.

In the acoustic mine, the coiled rod was replaced by a mechanism which responded to the noise output from a ship, and it needs but little imagination to see that numerous diverting combinations and permutations could be evolved, to the confusion of the enemy.

(v) By air attack on enemy minesweepers, in which Fighter Command were most co-operative. I would remind you in this connection that a minelaying operation does *not* end with the laying of the mines, it only begins, and all possible steps should be taken to exploit the presence of the mines.

(vi) By various *ruses de guerre*, such as the disguise of the " Manxman," to which I shall refer again, and by pure leg-hauling.

So much, then, for what we tried to do. Now a few words on how we tried to do it.

In accordance with pre-war plans, operations by ships of the 20th Destroyer Flotilla began in the Heligoland Bight as soon as the moon served, and in April, 1940, they extended their activities to Norwegian waters together with the submarine " Narwhal." In the meanwhile we were accumulating stocks of mines and putting the final touches to the plans for laying by aircraft. On 13th April, 1940, these operations were begun by Hampdens of No. 5 Group Bomber Command in the Belts and the Sound, followed by Beauforts of Coastal Command laying in the Elbe and Jade Rivers, both types of aircraft carrying one mine each. By the end of June, 1940, aircraft laying had been extended from Lubeck to the River Scheldt, to Oslo and Kharm Sound in Norway, and the Kiel Canal had also been mined. The destroyers extended their operations to the Dutch coast, and the submarines, reinforced by the " Porpoise," the " Seal," and the French " Rubis " carried on in Norwegian waters and the Kattegat. In the Mediterranean, the submarines " Grampus " and " Rorqual " began laying in Italian waters.

With the fall of France, aircraft operations were extended from the River Maas to the Gironde, and those of the destroyers and submarines to the Belgian and French coasts and the Bay of Biscay. Further areas were opened up in the Baltic, and in December, 1940, the Kiel Canal was again mined. Off Oran, the first carrier-borne minelaying operation in history was carried out by naval aircraft, who later laid mines off Cagliari, Benghazi, Tobruk, and Tripoli.

In 1941, aircraft of Bomber Command, Coastal Command, and the Royal Navy added the Frisian Islands, Dieppe, Calais, Quiberon Bay, Cherbourg, Heligoland, Horns Reef, Hartsholm, and Sassnitz to their list, and in the Mediterranean aircraft of the Middle East Command joined in with the naval aircraft to mine Spezia, the Piraeus, Brindisi, Lampedusa, Khoms, Corinth, Palermo, Zuava, and Marsala.

With regard to surface ships, January 1941 saw the start of minelaying by Coastal Force craft off the Belgian and French coasts, and the coming into service of the fast minelayers " Abdiel," " Manxman," and " Welshman." The " Abdiel " achieved fame by laying mines in enemy waters before she had completed her acceptance trials, a rather remarkable effort when one considers that 60 per cent. of her ship's company had never been to sea before, while the " Manxman " brought off a lay between Corsica and the Italian mainland, proceeding from and returning to the United Kingdom disguised as a French cruiser. Another interesting operation in 1941 was the laying of magnetic ground mines by the boats of H.M.A.S. " Australia " at Kerguelen Island, a suspected base for enemy commerce raiders.

The highlight of early 1942 was the success achieved against the German battle cruisers when they made their sortie from Brest. It is often supposed that the mines

were laid ahead of these ships as a last desperate attempt to catch them, but in fact they were laid beforehand by aircraft of Bomber Command and by the " Manxman," the " Welshman," and the " Plover " in anticipation of the sortie. In the event, it was the mines laid off the Frisian Islands by Bomber Command which did the damage. One of the destroyers proceeding down Channel to form part of the escort was also sunk on the " Plover's " minefield, and some minesweepers were damaged on the fast minelayers' fields.

In March and May, 1942, the effort devoted to minelaying by Bomber Command was stepped up, and Nos. 1 and 3 Groups were brought in to augment No. 5 Group, with aircraft carrying several mines and capable of reaching as far East as the Gulf of Dantzig. The activities of Coastal Command were, from April, 1942, confined to attached naval aircraft.

In the same year, following the entry of Japan into the War, Catalina aircraft of the Royal Netherlands Air Force laid British mines off Palembang, and the " Abdiel " off the Andaman Islands.

In the second half of 1942, No. 4 Group Bomber Command joined in, and operations were extended to Gdynia and Bornholm in the Baltic, and to Bayonne in the Bay of Biscay. Particular attention was in fact devoted at this time to the Biscay ports as a whole in order to assist in the protection of military convoys proceeding to North Africa, and in the early part of 1943 operations were chiefly related to that landing. Aircraft laid mines in La Goulette (the entrance to Tunis), and off Sfax, Trapania, Ras Kaboudia, Olbia, and Catania; the " Abdiel " and the " Welshman " in the Sicilian Channel; and the " Rorqual " off the Sicilian coast. As a result of these operations some forty enemy warships and transports were mined, and he was forced to reorganize the sailing of his convoys in such a manner that they became more vulnerable to air attack by day.

In January of 1943, No. 6 Group Bomber Command, Royal Canadian Air Force, were brought into the minelaying force, and on two nights in April, 1943, aircraft of Bomber Command performed the remarkable feat of flying from the United Kingdom across Europe to lay mines off Spezia. Otherwise the efforts of the Command were chiefly directed to the Biscay ports, while minelaying by Coastal Force craft was intensified along the whole of the Dutch, Belgian and northern French coasts and off the Channel Islands.

In the East, laying in Burmese waters was begun by Liberator aircraft of the American 7th Group, using both American and British mines. Laying was gradually extended to Indo-Chinese and Chinese waters, in which aircraft of Royal Air Force subsequently joined. In the South-West Pacific, Catalina aircraft of the Royal Australian Air Force began a series of extremely successful operations over a widespread area. Later in 1943, ten new areas were mined by aircraft in the Eastern Mediterranean.

The Normandy Landing

The year 1944 saw the climax of the minelaying offensive in all theatres of war. In Home Waters, a complex operation in connection with the Normandy landing was carried out by aircraft of Nos. 1, 3, 4, 5 and 6 Groups, Bomber Command, and by the " Apollo " (one of the two " repeat " fast minelayers), the " Plover," and five flotillas of Motor Torpedo Boats and four flotillas of Motor Launches. The plan took account, first, of the necessity to avoid compromise of the intended date and locality of the assault, secondly to ensure the freedom of movement of Allied

forces, and thirdly to meet the requirements of the military programme. I need hardly say that we blessed our ability to govern the lives of the mines with accuracy, both as regards the date and time at which they became active and that on which they became safe.

In the seven weeks preceding D-Day, the aircraft laid just on 4,000 and the surface craft 3,000 mines—a total of 1,000 mines per week. Some ten different types of mines were used, and taken by and large an all-time high in the solution of logistic jig-saws was achieved by the Armament Supply Department.

As a result of this minelaying, known as Operation " Maple," about a hundred enemy ships were sunk or damaged, while on 12th/13th May a special operation by Mosquito aircraft in the Kiel Canal materially contributed by holding up traffic for some days. In the previous month a first-class operation had been carried out in the Koenigsberg Canal by Lancaster aircraft of No. 5 Group.

Middle and Far East Waters

In the Danube, Mediterranean aircraft carried out a comprehensive minelaying programme, starting in May and finishing in October, 1944. About 1,200 mines were laid in all, and over 200 ships and river craft were sunk or damaged. This was not only the highest casualty rate per mine laid to be achieved in any theatre of war, but was remarkable as an exhibition of sustained ineptitude on the part of the enemy minesweeping organization.

In the South-East Asia Command, in Chinese waters, and in the South-West Pacific, operations were continued with success by the Royal Air Force, the Royal Australian Air Force, and United States Army Air Force, while the submarine " Porpoise " laid mines in the Malacca Straits, backed up by Patrol class submarines laying ground mines from their torpedo tubes. The " Ariadne "—second of the two " repeat " fast minelayers, operating under American command, also laid mines in the Pacific.

From the beginning of 1945 until the end of the War the story is much the same : interference with troop movements and U-boats in the Baltic and Norwegian waters, and the strangulation of Japanese sea-communications in the East. In the closing stages some interesting carrier-borne operations were carried out by naval aircraft in the Norwegian " leads " with the object of forcing traffic out into the open sea.

In the course of the War, approximately 74,000 British mines were laid in enemy waters, of which

54,000, or 72 per cent. were laid by Aircraft.
11,000, or 15 „ „ „ Fast Minelayers and Destroyers.
6,000, or 9 „ „ „ Coastal Forces.
and 3,000, or 4 „ „ „ Submarines.

Some 500 aircraft were missing in 21,000 sorties, and in 370 separate operations one fast minelayer, two destroyers, four submarines and four Coastal Force craft were lost. In addition, two fast minelayers and one minelaying submarine were lost while employed on troop- or store-carrying duties.

THE RESULTS

The results achieved are set out in Table " B."[1] Of the total casualties inflicted on the enemy, amounting to nearly 1,600 ships, some 85 per cent. were attributable

[1] See page 35.

to mines laid by aircraft, Bomber Command claiming over 60 per cent. This was to be expected, but I am sure you will agree with me that it in no way detracts from the value of this magnificent effort to point out that it may be invidious to compare the effectiveness of different types of minelayer solely on the basis of the number of casualties inflicted. To do so would take no account of opportunity, of the numbers employed, of the area of operations, or of the purpose for which the mines were ordered to be laid. On the basis of mines expended per enemy casualty the submarines ran the aircraft a very close second, both being below the average of 50 for all types of minelayer, while the Coastal Force craft expended about 60 mines per casualty.

Apart from the direct results, however, it is of importance to realize the indirect effects, such as :—

(*a*) The holding up of important ships and cargoes, and the interruption of vital supplies of raw materials.

(*b*) The dislocation of U-boat training and trial programmes, and the increase in the time required for the passage to their operational areas.

(*c*) The interference with the movements of troops and military equipment.

(*d*) The diversion of traffic and U-boats to areas where they were more vulnerable to attack by other means.

(*e*) The adverse effect on insurance rates, and the refusal of neutral crews to sail.

(*f*) The overloading of other means of transport due to the mining of sea routes.

(*g*) The embarrassment resulting from the loss of specialized craft such as train ferries, tugs, and dredgers.

(*h*) The imposition of a vast minesweeping and degaussing effort on the enemy.

On the other side of the balance sheet, 281 British war vessels of all types, and 296 British merchant ships were sunk by enemy mines, while the total casualties to Allied merchant ships were 521 sunk and 130 damaged.

The enemy casualty figures to which I have referred do not include those for the East, where 19 naval vessels and 247 merchant ships are reported to have been sunk by American mines, and 8 naval vessels and 13 merchant ships by British mines—a grand total of 287 ships sunk. In addition, 34 Japanese ships were sunk due to " causes unknown " and it is probable that a proportion of these casualties was also attributable to Allied mines.

Conclusion

I will not disguise from you that we made mistakes, but the Germans made many more. I would attribute their failure to make the best use of their vast resources to lack of co-ordination, to jealousy between the German Navy and the *Luftwaffe*, and to an inherent tendency to regard technical excellence as a substitute for adequate planning.

Our own comparative success, and I make no bones about so describing it, was on the other hand largely attributable to team-work at all levels, both within and between the Services concerned, to our early grasp of the fact that the scientist and the designer must be kept in the operational picture, to the technical ascendancy achieved by them, and above all to the skill, courage, and determination of those who laid the mines.

I would submit to you, in conclusion, that for as long as ships continue to be used for purposes either directly or indirectly connected with war, the mine will continue to be a potent weapon, particularly in the hands of aircraft and submarines; that money devoted to the development of our own mines and to the provision of countermeasures will be money well spent; and that we should have constantly before us the need to study the proper employment of our resources, remembering always that minelaying is not a black art, but simply an effective method of applying the Principles of War.

TABLE A

PRINCIPAL BRITISH MINELAYERS

Name	*Type*	*Mines Laid*	*Remarks*
"Adventure"	Cruiser/Minelayer	12,401	Damaged by mines.
"Southern Prince"	Converted Merchant Vessels	23,762	Damaged by torpedo.
"Menestheus"		22,866	Damaged by bombing.
"Port Quebec"		33,494	
"Agamemnon"		24,216	
"Port Napier"		6,331	Destroyed by fire.
"Teviot Bank"		15,865	
"Bungaree"		6,800 (approx.)	Royal Australian Navy.
"Plover"	Coastal Minelayers	15,327	
"Van der Zaan"		2,198	Royal Netherlands Navy.
"Hampton"	Converted Train Ferries	5,190	
"Shepperton"		2,742	
"Princess Victoria"	Converted Car-Ferry	2,755	*Sunk* by mine.
"Abdiel"	Fast Minelayers	2,207	*Sunk* by mine.
"Manxman"		3,111	Damaged by torpedo.
"Welshman"		3,275	*Sunk* by torpedo.
"Ariadne"		1,352	
"Apollo"		8,361	
"Latona"		Nil	*Sunk* by bombing.
"Express"	Destroyer Minelayers	1,210	Damaged by mine.
"Esk"		1,110	*Sunk* by mine.
"Icarus"		1,196	
"Impulsive"		892	
"Ivanhoe"		754	*Sunk* by mine.
"Intrepid"		1,592	
"Porpoise"	Submarine Minelayers	465	*Lost.*
"Narwhal"		450	*Lost.*
"Cachalot"		300	*Lost.*
"Seal"		50	*Lost.*
"Grampus"		50	*Lost.*
"Rorqual"		1,284	
"Rubis"		684	French.
Coastal Force Minelayers		6,900	Four *lost.*
Aircraft		54,194	500 *missing.*

TABLE B

ENEMY CASUALTIES DUE TO BRITISH MINES

Type of Enemy Ship	*Mines laid by Surface Vessels*		*Submarines*		*Aircraft*		*Total*		*Grand Total*
	Sunk	*Damaged*	*Sunk*	*Damaged*	*Sunk*	*Damaged*	*Sunk*	*Damaged*	
Battleships	—	—	—	—	—	1	—	1	1
Battle Cruisers	—	—	—	—	—	2	—	2	2
Destroyers and Torpedo Boats	12	3	4	1	5	5	21	9	30
Minelayers	—	—	—	—	2	—	2	—	2
Patrols Escort Vessels	3	8	2	3	28	39	33	50	83
U-boats	17½[2]	—	—	1	16	13	33½[2]	14	47½[2]
Sperrbrechers	9	3	—	—	22	74	31	77	108
Minesweepers	8	14	3	—	50	68	61	82	143
E-boats	5	1	—	—	—	3	5	4	9
R-boats	7	9	—	—	4	2	11	11	22
Naval Auxiliaries	2	2	1	—	20	16	23	18	41
Depot Ships	—	—	—	—	—	1	—	1	1
Merchant Vessels	38	7	34	3	342	195	414	205	619
Tankers	—	—	—	—	75	7	75	7	82
Train Ferries	—	—	—	—	5	4	5	4	9
Dredgers	—	—	—	—	2	1	2	1	3
Tugs	—	—	1	—	46	6	47	6	53
Armed Trawlers	3	—	7	—	11	9	21	9	30
Sailing Vessels and Small Craft	1	—	1	—	7	—	9	—	9
Fishing Vessels	7	2	—	—	30	11	37	13	50
Lighters and Barges	3	—	—	—	137	4	140	4	144
Unclassified	9	1	6	—	62	22	77	23	100
TOTALS	124½	50	59	8	864	483	1,047½	541	
	174½		67		1,347				1,588½

DISCUSSION

CAPTAIN R. H. F. DE SALIS, R.N.: I should like to pay a tribute to Sir Dudley Pound, who was a remarkable planner of minefields. He had an uncanny instinct in putting his finger on the right place for them. He often told us to put down mines in certain places, contrary to the advice of senior advisers, and six months later we got a dividend. We owe a great debt to him for starting the campaign off on the right foot.

The main object in mine-laying is to get the right mine at the right place at the right time, and a lot of work is required to do it. The planner and the scientist, the designer, the manufacturer of the mine, the men who store it and the user, all play an extremely important part in the team. A mine is a large and bulky thing and very dangerous to handle, yet we built literally hundreds of thousands. We tried to keep flexible. We did not altogether succeed, but we kept fairly flexible and we laid ourselves open to the charge of being wasteful for doing so.

Then there is the importance of secrecy in design. We knew the Germans before

[2] This figure includes credit for 4½ kills arising from 9 U-boats which were sunk "by surface laid mines or other causes."

the War had a magnetic mine, but we did not know what type it was they were using. It might have been the type which was similar to that laid in 1918. We worked out the answers for every type we could think of, but could not supply the answers to every ship in the Navy and Merchant Navy until we heard what we were actually up against; then we had the answer directly. We were trying to penetrate the German mine secrets years before the War and they were also trying to penetrate ours.

Another point I would underline is that the minefield is not necessarily unsuccessful if it does not sink any ships. An instance of that was the East Coast barrier. I do not think that barrier sank one single ship, but, on the other hand, the enemy did not send anything across that barrier except E-boats, so we were able to send vital convoys up and down the East Coast without protecting them against U-boats or surface ships. We had trouble enough protecting them against aircraft and E-boats, and if we had found it necessary to cope with others, it would have made things very difficult.

Our offensive was undoubtedly extremely successful, and this was due first of all to team work at high level between both the Naval and Air Commands.

Another point was that the layers realized that they must put down mines exactly where they were told. It takes a lot of courage to bring back mines, but that was done. We learned to trust both ships and aircraft only to put mines where they were told to put them.

Finally, the Lecturer has given the British losses as 500 aircraft, 5 submarines out of 7, 5 fast minelayers and destroyers out of 12, and 2 large minelayers. I should like to pay my tribute to those men—many of them my own personal friends—who gave their lives, and express my conviction that they did not give them in vain.

COMMANDER D. A. LAWFORD, R.N.: The Lecturer rather modestly omitted to refer to our enemy's appreciation of the effects of our mining campaign. I have here two extracts from German reports which we obtained and which may be of interest. They show that the Germans thought a good deal of our mining effort.

The first one was written by a German naval liaison officer to the *Luftwaffe* in May of 1943. He says: "The enemy has systematically mined the traffic routes. His method in such operations is worthy of admiration and results justify his efforts. The operations always produce results, even if these remain unknown to the enemy."

The second testimonial comes from a lecture given in the German Admiralty in November, 1944. The lecturer, describing our mining campaign, states: "From these details you can see that the enemy works skilfully, and I cannot help using the expression, really ingeniously. It is quite obvious that the campaign of mine warfare is carried on by a well organized group of men experienced in mining."

CAPTAIN W. G. ANDREWES, R.N.: It would appear that we are once again in that uneasy period between wars, and I should like the Lecturer to enlarge a little on such matters as organization and the plans made before the last war. Were they satisfactory? Were they complete so that we were in a position to start our mining campaign with a really good kick-off?

THE LECTURER: I think it is fair to say that, certainly when compared with 1914, we were in a very much sounder position. We had, in fact, as I mentioned, some cut-and-dried plans which were put into operation literally on the outbreak of war. I did refer to the fact that minelaying destroyers started operating in the Heligoland Bight, but it was unfortunate that the enemy chose the moment to commence warfare when the moon was not suitable for mine laying. Two destroyers were, however, loaded and ready to move off with precise orders as to where mines were to be laid. The operation had to be started a few days later, unfortunately, owing to the moon. All protective fields were planned in great detail and the necessary material provided.

I think it is true that people do not realize—and certainly did not realize at the time—the extent to which we had in fact cut-and-dried plans for a minelaying campaign in the event of war. Quite naturally the campaign in enemy waters could not be planned

in complete detail, because it depended a great deal upon the enemy himself and we could not foresee his movements. But at least machinery was available and capable of expanding to meet the situation as it arose. Although I would not go so far as to suggest that we are in another period of uneasy peace between wars, I hope and trust that in the event of an international emergency we shall find ourselves at any rate in as good a position as we found ourselves in 1939.

CAPTAIN W. W. DAVIS, R.N.: What the Lecturer has told us to-day emphasises the importance of imagination both in planning and in the technical spheres. I had the privilege, a few days after the armistice, of taking part in some of the interrogations of German naval authorities and scientists. One of the points they all brought out was how our mining campaign had completely foxed them. By the time they found out how one mine worked and how to sweep it up, we invariably had changed the bowling, and the impression they gave me was that Machievelli himself must have been seated at the British Admiralty—I leave you to guess who that was!

Perhaps the Lecturer would care to enlarge a little on what is a most important part of the organization, that which was devised during the War, for serving up what I think he describes as "mixed bags."

THE LECTURER: What we tried to do was to have a main programme, the general object of which was to keep the enemy firmly directed to one particular course of action from the point of view of dealing with our mines, wait until he had got all his mine-sweepers equipped with expensive, complicated and ingenious material, and then suddenly make a major change, throwing him completely off his balance when he found his sweepers were not of the slightest use. That sounds very easy, but the fact is you cannot very easily change your material on a large scale under war conditions. In fact, you cannot order less than, say, a thousand things in war time because no manufacturer will think it worth while to make less than a thousand. Also in war time no manufacturer will undertake to give you a thousand in less than six months, and six months is too long if you are trying to impose on your general minelaying programme those variations which make it so difficult for the enemy.

Therefore we set up in Portsmouth a special organization, manned almost entirely by specially trained Wrens, where, briefly, the designer worked on a blackboard at one end of a room, whilst at the other end of the room Wrens shovelled the results of his deliberations into the mine. The great point about this arrangement was that it could be done rapidly. On receipt of any intelligence about the enemy, or if we were considering a particular type of mechanism or a mechanism designed to achieve a better type of result, we had only to ring up this organization, which was known as MX, and at the end of a fortnight—and sometimes a week—they could produce for us a hundred mines embodying the mechanism designed to achieve a particular purpose. The mines then went direct to the aerodrome concerned and were laid.

The charm of this arrangement was that first of all we could superimpose these little variations on our main programme rapidly, and if it turned out to be a success, we could then include it in the main repertoire. If it turned out unsuccessfully we had not wasted very much time, money or material, and I think it is true to say that the designers, by actually seeing the things they drew on paper or on a blackboard appearing before their very eyes, learned a certain amount of what might be called the more mundane points of design, that is to say, does it make any difference whether a thing goes round this way or that way?

On the whole it was a magnificent organization, and altogether I think these Wrens and designers produced 5,000 mines, which was an extremely valuable piece of work.

MAJOR W. W. WHITNALL: Is it possible to recover mines once they have been laid?

THE LECTURER: It is possible to recover the ordinary moored mine. With regard to the ground mine, if you run an efficient sweep over it and it does not respond and you particularly want to get that mine, it is worth while sending a diver down to get it up.

If it were an enemy mine we particularly wanted to get hold of because records appertaining to it had been destroyed, it might be worth while sending a diver down to render it safe. It is a possible operation, but we do not normally attempt to pick them up off the bottom.

CAPTAIN F. H. M. VAUGHAN, R.N.: There were 1,588 German ships sunk and damaged, but if we had had "Machiavelli" against us, we might have lost 1,588 ships, which, combined with losses inflicted on us by submarines, might well have been disastrous. I would suggest, therefore, that minesweeping is of the utmost importance to a country which carries its cargoes on the seas.

CAPTAIN B. L. JOHNSTON, R.N.: In between wars the unspectacular is inclined to get completely lost, and work in connection with mining is one of the least spectacular of the lot. In consequence, I think we may say that between wars the mining section suffered from lack of funds, and was unable to develop quite as rapidly as it might have done. Having been to Germany and seen the layout which they made for mining warfare, I feel that if we had been able to keep the mine more in people's minds between the wars, we might have started just a shade further ahead and possibly achieved even better results than we did.

CAPTAIN E. ALTHAM, R.N.: The Lecturer alluded to "red pencil" minefields and questioned their value. But is it not a time-honoured *ruse de guerre* to announce certain areas in which you allege you have laid a vast number of mines, while you may still be laying them, or maybe where you have not laid any mines at all? If you can get these "red pencil" minefields on to the enemy's chart, may it not be that you are, in effect, doing some good?

THE LECTURER: That is perfectly true. It comes under the heading of what I referred to as pure leg pulling. Experience has shown, however, that in war a paper minefield is of very short-lived utility. In other words it is desirable, having declared a paper minefield, to implement that declaration with actual mines as soon as possible. It is a very short term ruse.

THE CHAIRMAN

I shall not attempt a formal summing-up but will simply express a few thoughts which occurred to me while listening to the lecture and subsequent discussion.

The first is the importance, as has been stressed by more than one speaker, of going on with these things in time of peace. I believe I am right in saying that the joint planning for laying magnetic mines by aircraft began with the consultations between the Admiralty and the Air Ministry in 1937, that is to say, two years before the War actually broke out. If we had not had that two years in hand, we should not have been able to lay magnetic mines by aircraft within a few months of the beginning of the War. I am sure that there are a number of people who, not understanding the problems involved, thought, when the Germans laid magnetic mines soon after the War began and we started to lay them a few weeks later, that we had sent down a diver to pull up a mine, had seen how it worked, and had then produced a few hundred immediately. It is vitally important to keep abreast of development in time of peace in all these matters.

I think the Lecturer was perhaps too modest in his claims as to the success of the minelaying campaign. It was an outstanding success, and was one of the few things which, from the beginning of the War, went on from strength to strength and from one success to another. I think that the table showing casualties to enemy shipping due to British mines is most impressive. In Bomber Command we did not feel any doubt as to the importance of minelaying work, and I know that went for the C.-in-C.—Sir Arthur Harris, who was very keen on mining, and for every aircrew who laid the mines. They knew the necessity of putting them in the right place, and I think everyone engaged in it realized the importance of the work.

As the Lecturer said, the results of mining were seen, not only in the impressive

casualties, but also in the great dislocation caused by the vast diversions of effort and the forcing of shipping into areas where it could be dealt with by other forms of attack, and so on. An enormous number of skilled men had to be used on minesweeping, and this was a serious drain on German manpower. Shortage of manpower was one of the factors which in the end brought them to a state in which they could not supply their Navy, Army or Air Force with the day-to-day weapons which were badly needed.

In a real sense the sea-mining campaign was a combined operation. Captain Cowie had a great variety of people working for him during the War. He not only had naval vessels—minelayers designed as such and small craft converted, but the three Home operational commands of the Air Force—Fighter Command, Bomber Command and Coastal Command. It is true that Coastal Command rather dropped out later on in the War, but all three Commands worked together in this minelaying job as a team. In Bomber Command we laid 49,000 mines before the War ended.

As the Lecturer pointed out, this business of varying the type of mines in order to confuse the enemy sweepers is much more easily said than done. I remember how often we had to send lorry loads of strange new mines across country in order to get them laid the following day. I see Air Marshal Constantine, who was A.O.C.5 Group, here, and he will remember particularly how often he was called upon to despatch special types of mines in lorries half across the Country where they were urgently wanted to put into a minefield to confuse enemy sweepers.

In war time there is not an awful lot to laugh at; there is one thing, however, we could laugh at and that was the enemy's discomfiture. All through the mine-laying campaign we were always trying to keep one jump ahead of him so that, however clever he thought himself, his sweepers got blown up. I, personally, got a lot of fun out of that. I think everyone in Bomber Command looked upon it in that way and took a keen interest in the game.

It only remains for me on your behalf to thank the Lecturer for the excellent talk he has given us this afternoon. (*Applause.*)

The vote of thanks to the Chairman, proposed by Captain W. G. Andrewes, R.N., was carried by acclamation.

INTER-SERVICE RESPONSIBILITIES

By " Bo'sun "

THE winner of this year's Royal Artillery Duncan Essay competition has raised a question of interest to all three Services. In discussing the future of long-range rockets, he has boldly advocated that the Royal Artillery should assume responsibility for this weapon on the grounds that it is really nothing more than a very long range gun. The problem of deciding, in the case of new arms or equipments, to whom shall be given the responsibility for " manning " is no new one. It probably arose when fighting men first started going to sea in ships. There may have been arguments in ancient armies as to whether elephants were cavalry, chariots, or fortifications! In modern times the Army has had several such problems to solve: the Mounted Infantry of the South African War—ought they to be infantry or cavalry; the anti-tank gun—should it be an infantry or an artillery weapon; the self-propelled gun—is it a true artillery weapon or just another form of tank; should mortars belong to the infantry or to the artillery? There have also arisen in modern times many similar inter-Service problems. Who ought to man Coast Defence Artillery—the Navy, Army, or Marines? Who ought to man the Air O.P.?

There are several alternative ways of solving such problems. One method is to form a new arm or branch to take charge of the new development. The principal disadvantage here is that one must draw the line somewhere, and limit the number of new fighting arms or Services. Tactical and strategical co-operation, already sufficiently difficult even between two or three, would become rather a head-ache if we had too many arms or Services.

Another idea—a temporary palliative rather than a permanent solution—is to select some arm or Service, notable for versatility and technical skill, and make it a sort of " Cinderella " for nursing all strange and new developments through their early teething troubles. Thus in our own Army the Corps of Royal Engineers has been foster-mother successively to the following formidable family—the Gunners themselves, Signals, Balloons, Aeroplanes, Searchlights, Survey, and many other babies, of whom some died in infancy. This idea of farming out a new weapon that nobody else wants to the first willing and versatile " foster-mother " has lead to some curious anomalies, as in 1914 for example, when the armoured cars of the British Expeditionary Force were manned by the Royal Naval Air Service and the 15-in. howitzers of 1915 by the Royal Marines. Though this method has its advantages in the early stages (for research is in the hands of disinterested and impartial technicians, and the baby, if unpromising, can easily be strangled at birth without causing grievance), it is obviously not fair, either to the " foster-mother " or to the infant, that the relationship should be made permanent. The Royal Engineers would be an unwieldy corps to-day if changes of organization had not removed their successive off-spring.

Eventually, therefore, the question has to be faced " To which existing arm or Service should the " manning " of this or that weapon be entrusted? " It can be solved in one of three ways, either (*a*) according to the material shape or form of the weapon or (*b*) according to the use to which it is going to be put or (*c*) according to where it most conveniently fits in the " general technique " of this, that, or the other Service. This third alternative, which I strongly advocate myself, requires

a little more explanation than the others, and may therefore be studied separately later. The first two are self-evident.

Thus, for example, the Duncan Essayist regards the long-range rocket as a future artillery weapon because, as he quite rightly says, it is just a gun. The " gun " itself may have dwindled to nothing more than a prepared platform with a railway serving it, and the projectile may have enlarged itself out of all proportion, but for all that the long-range rocket is an artillery projectile technically, and not an aircraft. As this is so, it should be manned, according to the Duncan Essayist, by the Royal Artillery. This is alternative (*a*)—classification of responsibility according to the material shape of the weapon in question.

This method of allocating responsibility is by no means generally adopted in the British Services. We do not, for example, put all guns (including battleship's guns) under the Royal Artillery just because they are guns ; we do not put air-sea rescue craft under the Royal Navy just because they are marine craft ; nor all lorries under the Army just because they travel on land.

It is true that there is one notable exception—the theory (enforced in practice except for Naval Aviation) that aircraft should be a monopoly of the Royal Air Force. In view of the fact that the only other likely claimant to long-range rockets will be the Royal Air Force, there is perhaps poetic justice in the Royal Artillery using against them the very same argument which they themselves put forward in support of their monopoly of aircraft !

But seriously it is not a very good precedent to follow. I have no wish to enter upon that controversial subject here, but it is an undisputed fact that there does exist a strong school of thought which does not consider this exclusive monopoly of the air by one Service to be the best arrangement. Two " wrongs " do not make one " right." Is it really in the best interests of all round efficiency that the Royal Artillery should saddle themselves with this new weapon, just because technically it is a gun ? It is true that its " gun drill " could probably be rendered sufficiently similar to that of smaller artillery equipment to present no difficulties in the training of detachments. It may also be true that some of the gunnery problems involved (though far from all) may bear a certain resemblance to those of normal gunnery. But in almost all other respects its links are with the Royal Air Force rather than with the artillery of a predominantly mobile field force, such as the Army.

Future rockets will almost certainly be radar-guided, and may also be given certain gliding properties, which will demand in rocket experts some knowledge of the theory of flight. The line of demarcation between rockets and jet-propelled flight is even now not very clear, and may well close to vanishing point in future as the time of burning of rockets is increased. Some future rockets may have two forms of propulsion embodied in them—an initial rocket action, with jet propulsion to carry them over the bulk of their trajectory. If this occurs, they will be hardly distinguishable from a pilotless jet-propelled aircraft with a rocket-assisted take off.

From the point of view of employment, they will supplement, or perhaps eventually altogether replace, the piloted bomber aircraft. Their role will in fact be strategic bombardment with occasional diversion to a role of tactical participation in the land battle. Functionally, therefore, they will be the successors of Bomber Command. They will be launched from permanent or semi-permanent sites, analogous to aerodromes which launch heavy bombers. Personnel will require no knowledge at all of the art of mobile field warfare. It would, therefore, be a sheer waste of artillery personnel, trained to work and move with the field army, to tie them up

in this static role. Personnel will on the other hand require an intimate knowledge and close liaison with the static network of radar and wireless controls, on which the Royal Air Force relies to manoeuvre its aircraft of all sorts about the sky. Functionally, in fact, these long-range projectiles will be pilotless expendable aircraft netted into the elaborate radar and wireless control network.

Defence against these rockets may well be carried out by launching against them much smaller " chaser " rockets and ensuring collision in mid-air by means of radar guidance. This again will be a direct descendent of the interception work of Fighter Command.

In short, far from making the long-range rocket a child of the Royal Artillery, just because it is a gun, it may be better to go to the other extreme and put static anti-aircraft artillery under the Royal Air Force. This constitutes alternative (*b*)—allocation of responsibility for weapons *not* according to the material shape of the weapon at all, but according to purpose. Let us examine a possible sub-division of labour, as between the three Services, on " functional " lines.

Let us imagine the Royal Navy to be made responsible for :—

(i) The transport of fighting power of all kinds (and all raw materials on which fighting power depends) in surface or submarine craft.

(ii) The development of fire power (of all kinds) from all forms of marine craft, whether such fire power be used against other marine craft, or against aircraft, or against targets on shore. The term " fire power " includes fire power by means of aircraft.

Let us imagine the Army to be responsible for :—

(iii) The securing and holding against land attack of all territory of strategic importance (including of course all air or naval bases).

(iv) The capture of territory of strategic importance to the enemy (including of course his air or naval bases).

Let us imagine the Royal Air Force to be responsible for :—

(v) Strategic bombardment, whether by means of aircraft or rockets or any other weapons.

(vi) Defence against strategic bombardment of all kinds.

The criterion for allocation of responsibility for this weapon or that would be, by this method, decided by answering the question, " What is it for ? " Thus, for example, by this way of allocation, the Royal Air Force would man all anti-aircraft intended for Home Defence, but the Royal Navy would have their own ship-borne anti-aircraft and the Army would also have its own for the local defence of military units, formations and areas. This method of allocation is certainly more logical and practical than alternative (*a*), but it still leaves many gaps and border-line cases. It is, however, the method by which we do in most cases decide the ownership of various activities, with, as already mentioned, the outstanding exception of aircraft, over which the Royal Air Force exercise a practical monopoly, irrespective of the function of the aircraft. Good examples of the application of this " functional" principle are air-sea rescue craft, which belong to the R.A.F. in spite of being marine surface vessels. They belong for the very good reason that their sole function is connected with aviation. By virtue of this principle the R.A.F. also possesses its own armoured cars (R.A.F. Regiment) though on " monopolist " principles, these should logically form part of the Army.

The weakest point about allocation by the criterion of " purpose " lies in the fact that many weapons may be used for two or more very different purposes. It might

also sometimes form an obstacle to perfect liaison. It might, for example, be in the interest of the war effort as a whole that the strategic bombing force (rockets or aircraft) should on a certain occasion be used in the land battle. If it happened to have a commander who did not believe in diversion of strategic bombing effort to the tactical needs of the land battle, he could take refuge behind a strict interpretation of the " purpose " for which his force had been created. For all these reasons I suggest that the best criterion of all for deciding the right allocation of responsibility or ownership of various weapons will be the criterion of " general technical setting."

By this method the Royal Navy would take over all branches of fighting activity which require a knowledge of *naval technique*, in which term I would include seamanship, the transport of anybody or anything by sea, and the launching of anything (whether shells, rockets, torpedoes or aircraft) from ships for any purpose whatever. They would, therefore, man anything and everything concerned with proper sea voyages (as opposed to " messing about locally in boats "). They would man anything concerned with the development of fire power from ships (including, of course, ship-launched aircraft).

The Army, by this criterion, would be responsible for all forms of fighting activity requiring a knowledge of *military technique*, in which term I include the tactics of fighting on land in mobile operations, and the art of moving and maintaining troops in the field. Its province would thus cover, for example, all air units which function, not from static or semi-static aerodromes connected up with the elaborate radar and wireless network of the R.A.F., but from little temporary landing strips, such as those used by Air O.P. units. Air " experts " often claim that there can be no form of flying in war which can function independently of centralized flying control. This is not correct, as the Air O.P. units proved and as the Russian close-support light bombers also proved. There is scope for employment of very light aircraft, using ordinary fields and flying only very low, for many purposes of the land battle. Such units will have to live and move like any other units of the forward zone of the armies. Their personnel must, therefore, understand the technique of living in the field and the technique of battle co-operation as practised by field armies.

The Royal Air Force would take over all weapons and ancillary equipments which develop fire power from *static or semi-static bases*, and whose fire power is dependent for full efficiency upon a *static or semi-static radar network*. Their province would, in fact, include everything whose work depends upon *modern flying control technique* and meteorological service of the standard used by the R.A.F. to-day. It will be seen that this would include several forms of activity that do not come under the Royal Air Force at present. Notable among these would be coast defence and static anti-aircraft defence, whether achieved by means of guns or aircraft or rockets or by any future invention.

My point is that there is a certain " technique " which, for lack of a better term, one might call " radar technique." It consists in broad outline of two essential factors which are (*a*) projecting fire power of some kind from a *static base*, and (*b*) controlling that fire power by radar methods. It is practically the same technique, whether it be a question of controlling heavy night bombers over Germany, or directing shore based air attacks against shipping in the Atlantic, or directing interceptor fighters against bombers. It is even the same technique, or very similar, when it is a question of directing anti-aircraft shell-fire by radar methods or (in the

future possibly) of directing small radar-controlled rockets into collision with long-range atomic bomb rockets. It matters not at all whether the target of the fire power be a ship, an aeroplane, a giant rocket, or an enemy industrial area. The essential technique is the same in all—the efficient working of an elaborate shore-based static lay-out of launching bases and radar/wireless network. Personnel engaged in this work, from the commander downward, will need to know nothing of the technique of seamanship (though they may often shoot at ships hundreds of miles out at sea by means of their shore-based lay-out). Nor need they know anything at all about field-craft or land warfare (though their fire power may often participate, as a pre-arranged " set piece " in the land battle, just as Bomber Command did at Caen). In case any readers may doubt the feasibility of putting coastal and anti-aircraft guns under the R.A.F., the answer is that these guns (if indeed, they are not superseded by longer-range guided weapons) will tend to depend more and more on radar for fire control, and progressively less and less on simpler optical methods.

This criterion for allocation of work as between the three Services, would leave sufficient loop-holes for convenient minor anomalies by virtue of the blessed word " ancillary." Thus the Royal Air Force would keep their air-sea rescue service, because it is " ancillary " to the task of safe and centralized flying control. They could keep the R.A.F. Regiment, because this is a necessary " ancillary " to maintenance of secure bases. (Their responsibility could only cover security against raids, sabotage, and light scales of attack by air-borne forces or guerrillas.)

Similarly, each of the other two Services would be able to keep, as " ancillaries," such minor exceptions to the general rule as might be necessary for their own tasks. It would be possible, under this arrangement, for example, for very senior officers of the two older Services to keep their own aeroplane, just as they now keep their own staff-car or launch.

I contend that this division of responsibilities—by criterion of " general technical setting " instead of by mere shape or purpose, will provide the most logical and practical sub-division and one which will best facilitate the very smooth interlocking of the three Services which we must have.

To sum up :—

(*a*) ROYAL NAVY. Movement by water. Fire power *of any kind and for any purpose*, from ships.

(*b*) ARMY. Movement other than in (*a*) and (*c*). Development of fire power other than from ships or from static and secure bases on shore, *irrespective of the nature or purpose of this fire.*

(*c*) ROYAL AIR FORCE. Movement by air from static bases under control of a centralized flying control organization. Fire power *of any kind and for any purpose* from static and secure bases on land, such fire power being assisted by a statically installed radar/wireless and meteorological network.

NOTE.—This delineation of responsibilities would put all ship-borne aircraft under the R.N. (as now), but it would also give the Army responsibility for development of new types of " light " aviation such as helicopters for work in the field with armies.

THE SUPPLY AND TRAINING OF OFFICERS

On Wednesday, 19th November, 1947, at 3 p.m.

LORD HANKEY, P.C., G.C.B., G.C.M.G., G.C.V.O., in the Chair

THE CHAIRMAN: We have a longish programme this afternoon. To begin with we are going to hear officers from each of the three Service Departments describe the arrangements in their own particular Service for the Supply and Training of Officers, and it is my pleasure to introduce them.

They are Rear-Admiral Ruck Keene—Director of Naval Training at the Admiralty; Major-General McCandlish—Director of Personnel Administration at the War Office; and Air Vice-Marshal Baker—Director-General of Personnel at the Air Ministry.

NAVAL OFFICERS

By REAR-ADMIRAL P. RUCK KEENE, C.B.E., D.S.O.

SOURCES OF SUPPLY.

Our supply of officers for all branches is drawn from six sources :—

Dartmouth.
Special Entry.
Direct Entry.
From Lower Deck to "Upper Yardmen."
From W.O's Direct Promotion to Lieutenant.
Cadets (E) and (L) ex Artificer Apprentice.

It is interesting to note that all branches are trained together in the early training. Due to higher technical knowledge some branches have to break away earlier than others. To take these entries separately :—

Dartmouth.—Next year will commence the new sixteen-year-old scheme. The boy is eligible at sixteen. He will have to pass an examination which will approximate to the present School Certificate standard, and qualify. Then he will go before a very thorough Interview Board. If he passes he will go to the Royal Naval College, Dartmouth. There are no fees. Cadets can become Executive, Engineering or Supply officers. The course lasts two years.

Dartmouth College is run on public school lines. The time is divided more or less equally between English History, Geography, Languages, Mathematics, Mechanics and Science, with a small amount of Seamanship, Navigation, and Engineering.

Special Entry to Executive, Engineering and Supply Branches.—Boys enter between 17.4/12 to 18.4/12; qualify in a Civil Service examination, and then do the same interview. Then they go to Dartmouth for one term. Royal Marine officers enter in a somewhat similar fashion.

Special Entry Electrical Branch.—They enter between seventeen and nineteen; qualify by the Higher School Certificate with Mathematics and Physics as the main subjects. Their entry is then entirely decided by the interview. They join up with the other Special Entry Cadets.

Direct Entry for Executive and Engineering Branches.—These are the Merchant Navy boys from the training establishments "Pangbourne," "Worcester" and "Conway." Their examination is slightly different from Special Entry, but they have the same interview. They also join up with Special Entry. Their age of entry is 17.4/12 to 18.4/12.

Upper Yardmen.—This is the principal Lower Deck entry and it is at present confined to the Executive, Air and Electrical Branches. There are already schemes in existence for promotion from the Lower Deck in the Engineering, Royal Marine and Supply Branches, and it is now under consideration for these schemes to be brought into line with the Upper Yardmen.

They are accepted up to twenty-three and a half, but for some branches the age is up to twenty-eight. After passing educationally, they are selected by a Fleet Board. Then they go to the Upper Yardmen's school—H.M.S. " Hawke." For the first month they are under training and observation. Then they go before an Admiralty Selection Board. If they pass this final test, they do a year's training, except Electricians who only do one term. The first two terms are educational—Mathematics, History, English and Mechanics ; the third is Navigation and Seamanship.

Warrant Officers direct Promotion to Lieutenant.—The Admiralty are planning for up to 20 to 25 per cent. of all officers to come from the Lower Deck. This scheme of promotion from Warrant Rank with the Upper Yardmen scheme, will provide the main supply.

They enter from twenty-five to thirty-six, are selected on their Commanding Officers' reports by the Admiralty, do thirty-four weeks technical courses, during which time they are finally selected for promotion.

Cadets (E) and (L).—This is a small entry. They are bright Boy Artificers who go to the Training Cruiser after one term at Dartmouth, and from there go on with all the other engineer and electrical officers.

So much for the way the officers are entered and initially trained. All except Upper Yardmen and W.O's Direct promotion to Lieutenant meet in the Training Cruiser.

The Training Cruiser

This is an excellent training. The Cadets do two cruises lasting about eight months. They gain experience of the conditions under which men of the Lower Deck live and work, and learn to understand the general organization of a sea-going ship. They complete their theoretical instruction in Astronomical Navigation, Engineering, Naval Electrics and Ship Construction up to the rank of Sub-Lieutenant. They get practical instruction in Seamanship, Navigation and Engineering. They also get elementary instruction in Gunnery, Torpedo, Anti-Submarine and Communications.

Supply Cadets do some specialist supply work in the Cruiser, but otherwise work with the others, working " part of ship," running boats, etc.

Midshipmen's Time

After this the Executive and Supply Branches go off to sea as Midshipmen, the Executive first doing a month's gunnery training to give them sufficient technical knowledge to fit them for gunnery duties. The Engineers go to the Royal Naval Engineering College, Devonport.

Greenwich University Course

After their Midshipmen's time the Executive and Supply Branches meet again and go through a general education course at Greenwich. This is run on University lines and has no examinations.

The object of this course is not only to supplement their mathematics and

scientific education, but to teach self-study and world affairs, a short war course and voluntary subjects from ornithology to aerodynamics.

EXECUTIVE BRANCH

The Executive Branch then go off to sea again and do four months in small ships as Acting Sub-Lieutenants. Then they go ashore again to be technically trained for thirty-six weeks in Gunnery, Torpedo and Anti-Submarine, Navigation, Divisional work, Signals, Air, Combined Operations, Damage Control; then to sea as fully-trained Sub-Lieutenants.

Executive Specialist

As Lieutenants, they volunteer and branch off to become trained as Specialists in Gunnery, Torpedo and Anti-Submarines, Navigation Direction, Signals, or Physical Training and Welfare.

The Air Specialists break away as Sub-Lieutenants after getting their Watch-keeping Certificates and go through eighteen months air training. The Submarine Specialists break away after the Sub-Lieutenants' Technical courses, doing eighteen weeks Submarine course.

Higher Courses

During their subsequent careers they are selected to go through some or all of the following courses:—

The Tactical Course;
Royal Naval Staff Course;
Joint Services Staff Course;
Senior Officers Technical Course;
Senior Officers War Course;
The Imperial Defence College.

A small number of officers of the Engineering, Electrical, Supply and Instructor Branches also attend the Staff Course.

Now to trace out the training of the other Branches: the most interesting of these is the Electrical officers.

ELECTRICAL BRANCH

Modern electrics with radar obviously required a special branch of their own to deal with them; hence the new Electrical Branch.

After the Training Cruiser they break away completely, and after a qualifying examination go to a University for three years to get their Degree. During this course they sandwich in a lengthy period of Works training with the large Electrical Engineering concerns of the country. Thus, for the first time, we are going outside and using existing civil organizations to give our officers their basic technical training. The advantage to these officers in after life of having a proper Degree is obvious.

After qualifying at the University, they do two months in the Naval Electrical School on purely naval electrics. The Upper Yardmen join in at this stage, having first done a year's course at Greenwich.

After this, they go off to the Fleet for six months, then do five and a half months Works training with radio firms, sandwiched between periods at the Naval Electrical School in which they cover W/T and Radar equipment. They are then fully trained and go off to the Fleet.

The Lieutenants promoted direct from Warrant Officer join in at this stage after doing about a year's technical course at the Electrical School.

Ultimately it is anticipated that the whole of the staff of the Director of Electrical Engineering will be absorbed by this new electrical branch; then they will fill dockyard and Admiralty departmental posts.

ENGINEER BRANCH

After the training cruiser, the Engineers break away and go to the Royal Naval Engineering College, Keyham, for one year, then to sea as Midshipmen (E) for eight months, then back to the Royal Naval Engineering College for two years and finally to sea as Sub-Lieutenants (E).

After not less than a commission at sea they specialize in either Marine, Air or Gunnery Engineering, which takes six months. Later in their careers some can qualify in advanced courses in these subjects. These are very thorough and long courses which take two years.

The Admiralty have a revised scheme of training under consideration which aims at providing :—

1. A longer period of common training with officers of other branches ashore and afloat; and
2. A two years basic Engineering Course on University lines.

The object of the proposed change is to broaden the outlook and interest of junior Engineer officers by a longer period of common training and subsequently to provide an education of University type up to Degree standard in the principles of mechanical science on a broad, rather than a specialized basis, thereby producing an Engineer with a sound and broad knowledge of his subject.

SUPPLY OFFICERS

These have been with the others right to the end of the Greenwich " University " course, then they break away to go to their technical training establishment for four months, and then to sea fully trained as Sub-Lieutenants (S). It is hoped shortly to reduce the time as Midshipmen (S) to the same as that for Executive Midshipmen, so that they will keep exactly together.

Senior Lieutenants (S) and above undergo the Supply and Secretariat Advanced Course at Greenwich, while some are also selected to undergo legal training in chambers.

ROYAL MARINE OFFICERS

These, as I have already said, enter through the normal Special Entry system. Their initial training is purely military, approximating to what I can best describe as Army O.C.T.U. standard. This is followed by naval courses and a period embarked in sea-going ships of the Fleet. Finally they do advanced naval and military courses, including the general education course at Greenwich with the Sub-Lieutenants. It is a long and stiff training of approximately three years and eight months.

During their subsequent careers they have equal opportunity with other naval officers in various staff and specialist courses.

GENERAL

So you see we keep all our officers together as much as possible during their basic early training, releasing them as late as possible to break off and become

technical officers. This, more than anything else, welds them together as a team who know and understand each other's problems.

At present, we are faced with one very difficult problem which is peculiar, I think, to the Navy. It is similar in a way to the situation at the beginning of the Century, when it became imperative to make the Executive Officer into a part technician and which followed on the Selbourne report. Ships and weapons have become so technical and so complex that once again the Executive officer is faced with the difficulty of commanding ships and fleets in which, if we are not careful, he may find himself ignorant of many vital developments, and also ignorant of being able to direct and inspire future developments in machinery and weapons. One obvious solution is to make him far more technical from the very start, sacrificing much of our cherished early sea training.

Whatever is the best solution, there can never be more than one very definite and despotic Captain of a ship, and it is certain he cannot exercise that command and obtain the respect necessary for command without increasing technical knowledge.

I would welcome members' views on this in the Discussion.

ARMY OFFICERS

By MAJOR-GENERAL J. E. C. MCCANDLISH, C.B., C.B.E.

Each Service has its own special problems. That which affects the Army to a much greater extent than the other two Services is the treatment of what we are calling the National Service officer, i.e., the officer given a Commission during his fixed term of National Service—twelve months with the Colours for those called up from January, 1949. I am therefore going to devote an appreciable proportion of my talk to this category.

The Army has to consider four main types: the Regular or career officer; the Regular officer with a short service Commission; the National Service officer; and the officer in the Reserve Army—most of these last will be in the Territorial Army when the new National Service Act is in operation.

I am going to describe to you the procedure for the officers of what we call the "teeth Arms," namely, Armour, Artillery and Infantry, and the larger technical Arms such as the Royal Engineers, Royal Signals and Royal Army Service Corps, Royal Army Ordnance Corps and Royal Electrical and Mechanical Engineers, who are in the same general category, but have minor variations owing to their special conditions.

I am not going to touch on the method of selecting and training certain specialists, mainly men with professional qualifications whose careers naturally have to be influenced by their civil training. The most notable examples are doctors and dentists. I am not, moreover, going to deal with the special problem of the selection and training of women officers, which we are now discussing in conjunction with the Admiralty and the Air Ministry, as part of our plans for the Women's Services of the Regular Forces.

In some respects our present plans are far from clear-cut, because there are factors affecting them on which we have not yet got decisions. We have, however, got our planning sufficiently far advanced for me to tell you what we are aiming to do in the post-war Army.

THE REGULAR OFFICER

For the Regular officer the basis of all our planning is the Royal Military Academy, Sandhurst, which opened at the beginning of this year. There are two other sources of entry which we consider equally important, though they will provide only a small proportion of the total intake, namely, entry from the Universities, i.e., after having taken a Degree, and entry from the ranks, i.e., those soldiers (whether Regulars or National Service men) who prove themselves qualified during their time as other ranks and yet are too old to go from the ranks to Sandhurst.

The Royal Military Academy, Sandhurst

The Cadet goes to Sandhurst between the ages of eighteen and a half and nineteen and a half, because the course there is of eighteen months duration and we aim to have the young officer commissioned between twenty and twenty-one. The Charter of the R.M.A.S., i.e., the object of the teaching there is :—

(*a*) To develop the Cadet's character and powers of leadership, and to instil in him a high standard of individual and collective discipline.

(*b*) To give the Cadet an understanding of the art of command, and the means whereby a high morale can be achieved and sustained.

(*c*) To show the Cadet how to keep himself and those under his command mentally alert and physically fit.

(*d*) To instil in the Cadet an enthusiasm sufficient to ensure his further unaided study of military subjects and general world affairs.

There are two main sources of supply—direct from civil life and from the ranks. In the former case, after (we hope) pre-service Cadet training, a candidate takes the Civil Service Commissioners' Examination, which is common to the three Services. The object of this examination is to eliminate the candidate who is below the standard of School Certificate plus one year's education. The Civil Service Commissioners' Examination has been criticized as putting too much emphasis on mathematics. It must be remembered, however, that while we want the boy with a good general educational background, we must have all officers up to a reasonably high standard in mathematics. Many officers require, for their future training and in their work, considerable knowledge of this subject. A special lower standard mathematics paper will be introduced for Army candidates in future entrance examinations.

Selection Board

The candidate who has had his medical examination before taking the C.S.C. Examination, and is successful at the latter, then goes through the R.M.A. Sandhurst Selection Board. This is a Board on the model of that probably well known to many of you, the War Office Selection Board—its object is to reject the candidate who has not the necessary attributes of character and leadership to make an officer. Candidates spend three days at this Selection Board, which is at present located near Horsham. Up to the present sixty-two per cent. of candidates reaching the R.M.A.S, Selection Board from the Civil Service examination have been selected as suitable for Sandhurst. Those who pass this Board are then called up for service in the ranks. The date of their call-up is fixed to ensure that they have at least four months service in the ranks before the Sandhurst half-yearly entry.

There has been considerable discussion as to the form of this service in the ranks. On the one hand, there would be considerable advantage in sending men to some special unit where they could be given what might be termed a pre-Sandhurst course

to ensure that all candidates entered Sandhurst on the same military standard. On the other hand, however, such a scheme would take away from these Cadets the value of ordinary other-rank service, in which they live and work with men who are not going to be officers. It would be interesting to learn, in the Discussion after this meeting, what are the views of officers and others who are here this afternoon as to which of these considerations is the more important. The War Office considers that the advantages of the latter outweigh those of the former, so men are sent to various units.

Parallel to entry after the C.S.C. Examination we have the entry from the ranks. Any soldier can apply, or can be picked out by his Commanding Officer, as a candidate for Sandhurst, provided he is in the same age zone as candidates from the C.S.C. Examination. The soldier who is recommended for Sandhurst training then goes through the same R.M.A.S. Selection Board, being tested in the same way as the boy from school, except that he is given an educational test with the object of finding out whether he has the necessary educational background to absorb the instruction given at Sandhurst. The percentage of candidates from the ranks whom we have found suitable has ranged from forty-seven in the first entry (which included a number of boys who would have taken a written examination had there been one) to thirty-three per cent. in the more recent intakes.

Training After R.M.A.S.

In this lecture I am unable to do more than to touch on the initial training of young officers, i.e. that training which is still required after they are commissioned to complete their young officer instruction.

The route from Sandhurst in the case of certain Arms is direct to active Army units, but most of the more technical Arms send the young officer, immediately after commissioning, on courses to complete his education in his own Arm before he joins a unit.

A proportion of the newly commissioned officers in each Arm (including eventually 100 per cent. in R.E. and R.E.M.E.) will go to the Military College of Science to undergo a long course at the end of which they can obtain a B.Sc. Degree from London University.

The career, as far as higher education is concerned, of the officer who is destined for high command or staff employment is via the Staff College, Joint Services Staff College and the Imperial Defence College.

THE NATIONAL SERVICE OFFICER

This, as I said before, is a problem which concerns the Army very much more than the other two Services. Although I am trying, throughout this lecture, to avoid figures, you will realize the size of the project when I tell you that we estimate that we shall get each year something of the order of 3,000 potential officers from the National Service intake. It is essential that we do not waste any of this intake, because we shall need all of it to make adequate provision for officering the Territorial Army in future. The immediate problem for the T.A. is comparatively easy: there are many thousands of released officers suitable to fill posts in all ranks of the T.A., but as these officers get older and further away from their active service experience, they must be replaced by a flow from the lower ranks. This can only be adequate, both as regards numbers and standard of training, if we make good use of the National Service man's twelve months with the Colours.

The present time is an interim one, when we have the National Service man for a period of 24 months, gradually running down to twelve months by the time the new Act comes into operation on 1st January, 1949. Further, men being called up now have no Reserve obligation, and will only be assets to the Territorial Army if they volunteer to serve in it. Our plans are aimed at getting ready for 1949, when the problem becomes most difficult, with a short period of Colour Service and because men have their six-year Reserve obligation. Our problem is, therefore, how to find the potential officer as quickly as possible, and how to give him officer training in the shortest reasonable time so that he may have the maximum possible time of service in a unit in order to practice what he has been taught theoretically in the O.C.T.U.

We hope that before he enters the Army the National Service recruit will have served some time in one or other of the pre-Service training organizations, for example the J.T.C. or A.C.F. This form of training has almost certainly the effect of developing leadership qualities in many boys who would otherwise not have the opportunity.

Starting in March, 1948, the Army is changing its methods of initial allocation and training of National Service recruits. Instead of entering all men for the General Service Corps, where their qualifications for Arms and their potentialities as officers are tested, we are going to allot men to Arms before they are called up. Their Service will be carried out in the Arm to which they are allotted initially, except that there will always be a small percentage who, when full selection procedure is carried out, are found to be more suitable for employment in some other Arm and will then be transferred. We hope to train any particular man to be an officer in the Arm to which he was allotted originally or to which he was transferred at the very beginning of his service.

The officer training of the National Service soldier will be carried out at an O.C.T.U. in the same way as during the late war and at present. We intend to have two of them. The eventual plan (I must call it such because this procedure has not yet been put into operation) is to give the potential officer sixteen weeks training, divided into two phases: an elementary six weeks phase covering subjects common to all Arms, and a more advanced ten weeks phase at the same O.C.T.U., during which progressive instruction is given on an " Arms " bias. He is then given a National Service Commission. As the length of officer training varies considerably from one Arm to another, this plan will involve further initial training in the technical Arms, carried out at the school of the Arm concerned.

The Cadet, by this time, will have become an officer. The policy of giving Commissions to all Cadets after the same number of weeks training is a new one; we are adopting it partly because we have found that soldiers are apt to shy off the Arms in which they have to spend more time as a Cadet and less as an officer. When the total compulsory service with the Colours is only twelve months, this feeling will naturally be more pronounced.

The soldier will reach the O.C.T.U. in very much the same way as he does at present, but with greater emphasis laid on the necessity for speed in doing so. The selection testing carried out in the first two weeks of training will bring to notice the potential officer. These soldiers, and any others whose potentialities are noticed by their commanding officers, will be examined by the Unit Selection Board, which exists in every unit. The candidate will then go to a War Office Selection Board, the operations of which are known to many of you. Its object is to find the candidate

with the necessary intelligence, character and leadership qualities to make him worthy of officer training. These Boards have abundantly proved their worth and are being copied outside the Services. They have been criticized, but usually by those who are ill-informed. I undertake to convince any unbiassed critic, but this is not the time or the place to do so.

The very maximum officer service which the National Service soldier can put in, before his twelve months are up, is about five or six months. Those who are not selected very quickly, and those who have to do young officer training after leaving the O.C.T.U., will do very much less. There may, in fact, be men who only finish their officer training in time to go to the Reserve. Even these latter will be worth training because of the service which they will give to the Territorial Army. It is obvious that the object of training for National Service officers, during the balance of their Colour service, is to give them experience in command of sub-units, i.e. platoons, troops, etc.

I would like to take this opportunity to scotch the rumour that National Service men given Commissions will be held to serve longer than the other ranks. That is quite untrue.

THE SHORT SERVICE REGULAR OFFICER

Except for specialists, such as doctors, and an experimental scheme which was carried out in a small way just before the late war in some technical Arms, the Short Service officer is a new concept for the Army. There is, however, a very good reason why we consider that he is likely to be part of the permanent post-war set-up, namely as a measure to improve the career prospects of the Regular officer. Obviously the smaller the entry each year into the Regular Army the more chances each individual has of promotion to higher ranks and, in particular, to Lieut.-Colonel, which is the first bottleneck now that time promotion exists up to Major. The shape of the Army, i.e. the number of platoon and similar commands required in relation to the number of senior posts, must always entail severe crowding-out at the higher ranks, i.e. compulsory retirement more than we think reasonable to make the Army an attractive career. The permanent introduction of a quota of Short Service officers, primarily filling subalterns' posts, is the best measure to increase the prospects of those granted Regular Commissions. Naturally a proportion of career Commissions will be available for the best of the Short Service officers.

THE RESERVE OFFICER

By far the largest part of the Reserve Army will be the Territorial Army. In addition there will be (as in pre-1939 days) a Supplementary Reserve (some of the members of which take on a higher obligation than those in the Territorial Army); the Regular Army Reserve of Officers; and the Territorial Army Reserve of Officers—forms of Reserve in which it is unlikely that the members will do training; and, finally, the Army Officers' Emergency Reserve, membership of which is on the basis that the individual gives an honourable undertaking to be called up for service in an emergency but has no legal liability to do so.

This afternoon I will deal only with the Territorial Army. I have already mentioned the two main sources of officers in the T.A., namely at present the released Emergency Commissioned officer and, eventually, the National Service officer at the end of his twelve months full-time service, carrying out his six-year obligatory part-time service and, we hope, volunteering at the end of that time to stay on in the T.A., in the higher ranks, as a form of public service and, we hope, also as a hobby.

There will also be one additional source of officers, namely from the ranks of the Territorial Army. Opportunity will always exist for the Warrant Officer. N.C.O. or man in the Territorial Army to apply for, and be granted, a Commission, Training this type of officer will be difficult. Unless he is exceptional and can devote appreciable time to special officer training, we will have to do the best we can within the periods, full-time or part-time, which the individual is able to devote to officer training. Some form of central training will be provided.

CONCLUSION

There are, in my view, four points which are the high-lights of our plan for the future with regard to officers to be brought to your notice.

Firstly, the cycle for the Regular officer, i.e. the average career, is something over 25 years. At the present time, it is inevitable that the factors on which we plan these careers are not firm. Therefore we have to move slowly, and it is not easy to avoid mistakes which may have consequences over a long period. Regular officers naturally ask us often what is likely to be their future, or what are the prospects for a young man wishing to make the Regular Army a career. We want to make it clear that there is no likelihood of there being an axe on Regular officers. The number of Regular Commissions now held is not more than about sixty per cent. of the officer posts which we contemplate having to fill for the post-war Army; the balance are Short Service officers. Any considerable change in policy, therefore, can be adjusted in a short time by our future policy with regard to short term Commissions.

Secondly, the Army will always be faced with the difficulty of giving adequate career prospects to the Regular officer, i.e. the reasonable prospects of promotion, because of the large number of junior officers required as commanders of platoons and troops in comparison to the number of senior posts. Adequate promotion prospects for the Regular can only be ensured by continuing the Short Service scheme as a permanent feature of the Regular Army.

Thirdly, the organization of the Army into Corps and Regiments gives us a different angle on the problem which is facing all three Services, viz. the need to balance the production and training of our many types of specialist, and the general training which is required of all officers to fit them for staff employment and the higher command.

Fourthly, and lastly, we have to perfect our arrangements for the selection, training and employment of National Service officers, all within the space of twelve months. This is going to demand skill and sound judgment in making a quick selection of potential officers, and very high-pressure training both at the O.C.T.U's and in the units in which these officers will spend their final months of Colour service.

It is hoped that this brief sketch of the Army's problems and how they are being tackled will show the extent to which the advent of National Service and changes in organization and weapons have made the 1947 picture differ from the 1939 one. The basic fact remains that an Army never has bad soldiers, but it may have bad officers. The success of the plan to select and train potential officers of the various categories will largely influence, as in the past, the quality and performance of the Army of the future.

AIR FORCE OFFICERS

By Air Vice-Marshal J. W. Baker, C.B., M.C., D.F.C.

There must inevitably be a common pattern for the supply and training of Regular officers entered directly into each of the three Services, although there are fairly marked variations in detail. It may therefore be of interest if I touch first on one or two features in our approach to these problems which have a rather special significance for the Royal Air Force.

Functional Organization

The first is our functional organization which affects all our plans both for the sources from which we draw our officers and the training we give them. The Royal Air Force has only existed for a generation and has had continuously to keep pace in these thirty years with technical developments in the field of aviation which are probably without parallel even in this scientific age. Thus, in order that our officers can in turn keep pace with the professional knowledge and standards expected of them we have had increasingly to canalize them into functional branches.

Before the War, we had only three main branches. These were the General Duties branch, which is the name we give to our principal flying and executive branch; the Equipment branch for the supply side; and the Accountant branch for pay and stores accounting. Within the General Duties branch we arranged for officers to specialize part-time in the technical, administrative and ancillary duties needing separate control and direction—Engineering, Armament, Signals; all the range of Adjutant and other unit and staff administrative posts—Police, Physical Fitness, and so on.

Within the last ten years, we have had to face a steady process of reorganization and readjustment to enable officers fully to master their own primary duties if they were not to fall between one or other of the professional stools on which the earlier system required them intermittently to sit. This process has been both hastened and broadened during the recent war with the result that, in settling down once again to a more or less stable peace-time force, we have had very largely to recast our branch organization *de novo*. It is only now that the likely size and shape of the Force has emerged from long months of study and planning; and even to-day, although the branches have received official approval in principle, the final establishments with the consequent ranking and careers of officers, have not been wholly agreed for them all.

And so, setting aside the purely professional branches—the doctors, dentists, education officers and so forth, we now have five main and five subsidiary branches, into which officers are entered and within which they find their entire career in the Service. These are:—

(i) General Duties
(ii) Technical
(iii) Equipment
(iv) Secretarial
(v) R.A.F. Regiment
(vi) Aircraft Control
(vii) Provost
(viii) Catering
(ix) Physical Fitness
(x) Marine

SHORT SERVICE COMMISSIONS

Another important feature in our arrangements for the supply and training of officers in these different branches, as distinct from the direct entry schemes,

is our system of Short Service Commissions and, linked to it, our plans for commissioning from the ranks.

For many years before the War we had this system of filling a large proportion of the junior flying posts for officers in the General Duties branch by means of Short Service Commissions for four or five years. The scheme had certain obvious disadvantages, but we thought them balanced by two primary advantages, apart from its importance in providing a fully trained reserve. First it enabled us to fill the disproportionately large number of appointments for the junior officers we needed without crowding the lists of permanent officers, whose career pyramid would otherwise have been far too broadly based. Secondly we saw that the scheme enabled us to gauge the officers character and qualities as a potential leader and commander and thus to select those with the most promising qualifications, apart from their technical or flying ability, for permanent Commissions.

In the General Duties branch, particularly, we have to give our young officers responsibility for tactical leadership of a very high order at an early stage in their careers. We have to pick them for qualities as individualists—quick mental and physiological reactions and great devotion to duty while working by themselves. Unless these qualities are possessed in a high degree by our flying personnel, the fighting power of our Service cannot be held to its peak of efficiency. There is no external means, such as the knitted discipline of a ship or a section, to ensure that the individual will get into close action or reach his objective.

Thus we look to the Short Service officers to fill a material proportion of our permanent vacancies when they have given us proof of these qualities and can be selected for their promise of developing, additionally, the integrity, ability and willingness to accept responsibility which mark down the future leader. We have accordingly decided to extend our pre-war Short Service schemes to the majority of the ground branches, although in some our aim will be rather to attract professionally qualified men from comparable civil careers, and to retain those who show a special interest and aptitude for Service work and conditions. The Catering and Physical Fitness branches are examples.

COMMISSIONS FROM THE RANKS

There is one notable exception. We do not propose to have any Short Service officers in the new Technical Branch, which now covers the whole field of officers required for Engineering, Signals and Armament duties. To balance the permanent cadre in this branch, to which I will refer again later, we propose to commission airmen selected from the ranks of the highly skilled tradesmen, most of whom will have entered through our own apprentice training schools.

The top-notchers among the apprentices may be picked to go straight to the Universities and gain their Commissions directly into the Technical branch after taking an honours degree. The majority will come from the ground tradesmen who have done eight to ten years in the ranks, including those who have taken on as Signaller, Engineer, or Gunner Aircrew and have served five years on flying duties.

This policy for commissioning young airmen is to be a feature of our supply of permanent officers in other branches where appropriate; not, as in the old days, after waiting to complete long service to Warrant Officer in the ranks, but while still young enough to gain a career at least to the middle senior ranks and with time and opportunity to go right to the top if their qualities merit such advancement.

In the General Duties branch there will be two stages at which aircrews may gain permanent Commissions. First, the selections from Short Service officers, who will themselves have been commissioned after eighteen months of their aircrew training. Secondly, towards the end of their first five years engagement as aircrew and, exceptionally, from those who re-engage for long service towards the end of their second five years. In addition the long-service aircrew may be selected to fill the bulk of the officer requirement in the Aircraft Control branch, which has been formed to embrace the officers needed for the fighter control and raid reporting systems and the air traffic control service—duties which have become an indispensable part of our organization.

The other three main branches—Secretarial, Equipment and the R.A.F. Regiment, will all have these Short Service and airmen commissioning sources of entry for permanent officers in varying degree; and the two former—the Secretarial and Equipment, will carry the main proportion of our officers required for the Women's Section of the Service.

The W.A.A.F.

With so little time at my disposal, I must be exonerated of discourtesy if I do not single out the women's section for more than passing mention. In any case, I should not need to do so because, in the Air Force, we propose to integrate the W.A.A.F. fully with the different branches on a one for one basis of substitution. We are planning to bring them under the standard disciplinary code for the Service and to give the officers powers of command and responsibility equally with their male colleagues. As their main opportunity will lie in the Secretarial and Equipment fields, we hope they will contribute largely towards meeting our needs for Short Service officers in these branches.

DIRECT ENTRY COMMISSIONS

I have spent much of my time in dealing with these less direct methods of entry and requirements in our branches but I hope you will have been able to follow in outline what we believe is a series of logical and coherent plans to meet this essentially large part of our regular officer commitments. In stressing these features I do not want to leave any sort of impression that the officer entered directly into the permanent service through Cranwell and the Universities is not the backbone of the Air Force, just as much as his counterpart in the Navy and Army.

To round off my talk, I want to run very briefly through the selection and training stages for the officers directly entering the main branches.

Officers for the General Duties, Secretarial and Equipment branches, and for the R.A.F. Regiment all enter by means of the Civil Service competitive examinations followed by medical tests, flying aptitude tests for the General Duties branch, and finally the Royal Air Force Selection Board. The latter we have modelled on the War Office Selection Board procedure and our candidates now spend three days at the Board undergoing various practical and theoretical tests for leadership qualities.

A few candidates for these branches may come from the Universities, but it is for the Technical branch that the Universities form the principal source of supply. We hope to get the majority of our directly-entered technical branch officers from University graduates with an honours degree, who will be commissioned on coming down, provided they have been accepted by a Selection Board and successfully pass the O.C.T.U. course.

I have no time to elaborate on the professional training in each of these main branches but here are just one or two special features to mention.

THE GENERAL DUTIES BRANCH

The General Duties branch, shorn of its unnecessary administrative and technical diversions, remains the principal executive and flying branch of the Service and there is still much specialized training and experience to be undertaken by the permanent officer to fit him for his tactical duties and eventual advancement to high command in the Service. The complex range of piloting and navigation work—knowledge of the tactical use of air weapons and aids, administrative and staff training must all be fitted into the career before an officer reaches the middle senior ranks.

We are just introducing a big change in our system of flying training, which we have called the "All through" training scheme. Formerly, an aircrew recruit was sent to an Initial Training Wing for preliminary drill and ground training; on to an Elementary Flying Training School for *ab initio* flying instruction; and so to an Advanced Flying Training School for applied flying on high performance training aircraft. Thus we wasted time on constantly moving the pupil around, and we lost value in the broken sequence of training and in giving the pupil insufficient time to settle down and get full benefit from a continuous association with his instructors. Under the new system, all three stages of training will be concentrated at the one station, and only when the pupil is ready for conversion to his operational aircraft will he move on to a new unit. Pilots and Navigators will follow the same sequence separately, meeting and crewing up as necessary with their signaller, engineer and gunner colleagues at the operational conversion unit.

THE TECHNICAL BRANCH

By combining the three technical sections of Engineering, Armament and Signals into one branch, we have merely confirmed a growing tendency for their work and their interests in the equipment of the Air Force to coalesce; armament and radio are now closely inter-related and the development of radar flying aids exerts a growing influence on the design and layout of aircraft as a whole. The aircraft, in fact, constitutes a single delicate instrument demanding an exact balance between the different technical interests to achieve the best results.

Post-graduate training in the Service is extensive, but perhaps the most interesting feature is our proposal to give technical branch officers of the future flying training up to as advanced a stage as possible on the principle that being able to fly will put the technical officer in a better position to collaborate with the General Duties officers in a common approach to air force problems.

The professional training in the Service for technical officers is in two stages, about five years apart in time. The first covers their needs as juniors, while the second introduces them to the more advanced stage of their responsibilities and will bring them up to date with equipment produced during the intervening five years of their service. At the latter stage, they will do a Combined Advanced Technical Course at which officers who have begun their duties in one section of the Branch will be brought together with their colleagues and afforded opportunity to study each others work and problems.

THE SECRETARIAL AND EQUIPMENT BRANCHES

We have just started training Cadets for permanent Commissions in the Secretarial and Equipment branches at a Wing of the College at Cranwell. They are accommodated at one of our earliest stations—Digby, a few miles from Cranwell. They will form an integral part of the College under the Commandant and the Director of Studies, but will have their own Commanding Officer and Staff of instructors. By this means we are bringing together from the outset the main Executive and the two principal Administrative branches of the Service so that they will have a common background and outlook on their primary duties while appreciating the extent to which each is mutually dependent on the other for the full efficiency of the whole.

The R.A.F. Regiment

By a gesture on the part of the Army which we greatly appreciate, our direct entry Cadets for the Royal Air Force Regiment are to be trained at Sandhurst. The basic training our Regiment officers require is obviously very much akin to that of the Army officer, and we hope by this means to maintain in our young officers of the future that close co-operation with the Army which has been such a feature of the Regiment's work during the war years wherever our duties have brought us together.

Obviously there is a danger here that the young Regiment officer will be out of touch with any specialized air force training until he joins his squadron. We hope to overcome any early shortcomings of this kind by making the Regiment largely responsible for the General Service Training which all branches of the Service will need to undergo.

GENERAL SERVICE AND COMBINED TRAINING

General service training is to be injected at all stages of our young officers' careers, of which the Regiment will direct, generally, the combat training whereby all ranks must learn to handle the appropriate weapon for defence on the ground.

For the Short Service officers and those entering from the Universities, there will be the Officer Cadet Training units.

At later stages, our permanent officers are to be brought together at intervals corresponding roughly with their steps in rank from Flight Lieutenant to Group Captain. First, there is the Officers Advanced Training School, where the junior officers will be prepared for their administrative responsibilities as young commanders. Then, at the Squadron Leader stage, there is our own Staff College for their introduction to the wider responsibilities of higher executive and staff employment. So they arrive at their inter-Service staff training as Wing Commanders at the new Joint Services Staff College or on interchange with the Colleges of the other Services, and finally as Group Captains or Air Commodores at the Imperial Defence College.

CONCLUSION

Time has been all too short to cover such a wide subject—I have been able to touch only on a few of the highlights; but I hope I have shown that we are very conscious of our responsibilities for finding appropriate solutions to these twin vital problems of the selection and training of officers in the Royal Air Force. I hope also I have said enough at least to counter the argument that there is no future for a young officer in the Service once he has become too old for flying.

DISCUSSION

THE CHAIRMAN: We have had a splendid start in the three statements of the plans and intentions of the Services and we come now to the stage of discussion. A number of distinguished visitors with special experience have accepted invitations to be present. I do not know that I shall be able to call upon them all because the list is rather long, but I shall call upon as many as I can. I will begin with Captain William-Powlett.

CAPTAIN P. R. B. W. WILLIAM-POWLETT, R.N. (*Captain of the Royal Naval College, Dartmouth*): I deal with the primary training of officers, so my points are merely on the first entry into the Navy. The only new thing that has come out is the 16-year-old entry. Details of it have not been made official yet, but it will not change in any way what we are doing at the moment in the Navy. The 16-year-old entry will get their equivalent of a Sixth Form education and the same type of training as we are giving the Dartmouth entry at the moment.

MAJOR-GENERAL F. W. H. PRATT (*President, R.M.A. Sandhurst Selection Board*): I think you would like to know that since our Board opened near Horsham in September, 1946, there will have been, by the end of this month, 3,000 applicants for entry into Sandhurst, and by January, 1948, there will probably be in residence something in the nature of 1,320 Cadets who wish to enter the Army. This shows that we expect to find something in the nature of 44 per cent. suitable.

Last Autumn the starters came to us without having done the Civil Service examination, because there was not one. There were 700 of them for Sandhurst at the term opening in January, and we found, as General McCandlish told you, 47 per cent. suitable; and that particular entry contained to my mind just about half who would have done the Civil Service examination if there had been one, and half who made up their minds to go into the Army after they had joined it and liked it. In the Winter, from January to April, there were 800 more starters for a term opening in May. Of those we found 42 per cent. suitable. There were fewer who, in my opinion, would have done the Civil Service examination and therefore the standard actually was a bit lower than the previous lot. Of those who went in August, exactly half did the Civil Service examination and half either failed in it or came in out of the Army, therefore the joint issue was about 48 per cent. suitable of those whom we saw. Those due to go next January are just about the same, with half who have passed the Civil Service examination and half who either failed in it or who, as I say, made up their mind to go into the Army, and I personally do not think the Commandant will find very much difference between his January intake this year, his August intake this year, and his January intake next year.

I think you might like to know something about the sort of cross-section of the country which has been trying for Army officer as a career. I personally have interviewed in fourteen months 1,600 candidates. They have come from 660 different schools—150 Headmasters' Conference schools, 500 Secondary and Elementary schools, and the balance of ten from Army Technical Colleges. The twelve schools that supported the Royal Military Academy, Woolwich, and the R.M.C., Sandhurst, over the last hundred years still provide one-third for Sandhurst. Of these, Wellington easily leads, but a good second is Eton, with Winchester and Haileybury about equal in third place. The others—Rugby, Cheltenham, Charterhouse, Sherborne, Bedford, Radley, Marlborough, and Blundells—all consistently support the Army, both by doing the Civil Service examination and by dodging it. I am always having my leg pulled about the sad fact that we find that most of the candidates from Winchester are suitable for Sandhurst "after further education."

As regards the examination, General McCandlish has mentioned that there is possibly too much bias towards mathematics. We do find that of the candidates who fail, 80 per cent. fail in that subject; although in practice, of those who have failed in the examination we have found 60 per cent. to be suitable for Sandhurst, and they did not show up that badly in mathematics in the assessments we gave them.

As regards the boy who leaves his school at fourteen or fifteen and goes to the Army Technical College, we find that, though he is trained very well as a technician, he has not

had much opportunity of cultivating qualities of leadership or building up character in that way. It is possibly an indictment of the Army, but we have not had very many successes from them.

I can promise you there is no " old school tie " complex about our selection. Our methods are quite straightforward: the 1,600 boys I have seen included 777 from Headmasters' Conference schools (150 different schools) and 750 boys from Secondary schools, the balance consisting of 80 Army boys. From those 150 Headmasters' Conference schools we have sent to Sandhurst 125, and from the Secondary schools 155. We treat the individual absolutely as an individual.

I would like to make two points this afternoon. In the first place, I do think the Army should have more publicity. The advantage of an Army officer's career is not very well known in the Grammar Schools, particularly in the North of England: 80 per cent. of our candidates come from South of the Trent, but only 20 per cent. from North of the Trent, and very, very few from North of the Tweed.

The other point I would like to make is that there are a number of candidates who put " Navy, Army or Air Force " as a multiple choice; of those who have been to all three Boards, 80 per cent. have been given the same grading, It is true that one who I thought was easily the best was thought to be the worst by the other two Boards, and one I thought easily the worst was swallowed whole by the Royal Navy; but in the case of the latter, a rather shamefaced Civil Service Commissioner confessed to us that they had added up his marks one hundred wrong and he should not have appeared before any Board; so it is not only the candidates who are weak in " maths."

Finally, I have tremendous confidence in the youth of this country: they are so straightforward and frank. As an example, a boy who put down that he would like to be a Regular because he would like to be a good officer was asked, " How much service have you ? " " Six months," he replied. " All in the same battalion ? " " Yes," he said. " Have you ever met a good officer ? " I asked. " As a matter of fact," he replied, " I have not, but I can quite imagine what one would be like ! "

AIR COMMODORE R. L. R. ATCHERLEY (*Commandant of the Royal Air Force College, Cranwell*): I will confine myself to the main points of difference, as we see it, between the training at Cranwell and Sandhurst.

The course of training for the Flight Cadet at Cranwell lasts 2 years 8 months as opposed to 1 year 6 months in the case of Sandhurst. The Flight Cadet undergoes his " rank service " for the first eight months at Cranwell as opposed to an O.C.T.U. in the case of pre-Sandhurst training. This is possible at Cranwell because entries are only forty strong, and it has the definite advantage that during this period Flight Cadets are able to commence their academic and Service training from the outset.

The total strength of the College is 320 Cadets. The total course lasts eight terms. There are three terms of thirteen weeks each a year with thirteen weeks leave interspersed.

Mr. Patrick Johnson, late Vice-President of Magdalen College, Oxford, is the Director of Studies at the College. His Staff comprise officers of the G.D. Branch, Engineer Branch, and Educational Branch of the Royal Air Force.

MAJOR-GENERAL F. R. G. MATTHEWS (*Commandant of the Royal Military Academy, Sandhurst*): Most of what I could say has already been said fully by General Pratt; but I think probably the thing you would like to know about most of all is the entry through the ranks to Sandhurst. Every boy comes through the ranks, and I thought at first that we ought to have a pre-Sandhurst training unit, as they have at Cranwell. Now that the R.M.A. has been running just over nine months, I am convinced that such a unit would be quite wrong if the object of going into the ranks is to know what are the conditions of the men whom they are going to command afterwards; but instead I feel that any boy who goes into the ranks should go into a first-class unit and be trained there for his six months.

Air Vice-Marshal Baker said that we had the R.A.F. Regiment Cadets at Sandhurst. I might add that they fit extremely well into our plan of trying to start co-operation of all three Services at an early stage in the officers' career. It was mentioned that they would not perhaps have the Air Force picture. That, I hope, will not be true, because at Sandhurst I have a member of the Royal Navy on my instructional staff and also a member of the Royal Air Force, whilst at Cranwell there is a soldier.

There is one difference between the three Service systems. I am responsible for the basic training of the officer for technical arms, whilst generally in the Navy and in the Air Force that is not so. I am not going to say anything about it, but there is that difference; and, of course, the basic training of the Technical Cadet at Sandhurst has to be very carefully studied to get him up to the standard required in order that he may finally, when leaving the Military College of Science, get a B.Sc.

MR. J. F. WOLFENDEN (*Headmaster, Shrewsbury School*): I want to begin with a three-fold apology. First, I have no mandate whatever to speak for the Public Schools but only for myself; secondly, I am no expert in this particular matter; and, thirdly, I see in the front row here one who was my own distinguished predecessor at Shrewsbury and who is now Director of Studies at Sandhurst.

I would like to make one general point first about the supply of officers to the three Services, because perhaps it is where we in the schools begin our connection with this problem. I would have said that in general, in my experience, the three Services lament equally loudly and equally continuously the fact, as it seems to them, that each one of them gets far less than its share of the boys from the Public Schools. There was a glorious week in my life, which I remember well, when I had distinguished officers of each of the three Services to see me in the course of one week, each of them making precisely that point. First of all, a naval officer came and said, "I don't know where all your boys go to, except that it is either to the Army or to the R.A.F." Then within two days an Army officer said to me, "I don't know where they go, but none go into the Army"; and only two days after that an officer of the Royal Air Force came to see me and his comment was, "God knows where they all go." In point of fact, there are not very many boys in the Public Schools out of the whole population of the country, and I think it would probably be found that each Service is getting certainly a share, though whether it would be called a fair share is a matter of controversy. I am talking now of peace-time Regular Commissions, not of National Service applicants.

On this point of supply, it seems to me from my short experience that, so far as the Navy is concerned, there is no real problem. The boy who at the age of eight says he is going to go into the Navy in fact goes into the Navy when the time comes: it is not one of those things, like chimney sweeping or engine driving, that they grow out of. I do not pay the faintest attention to what small boys say about their futures except when it is the Navy, where my experience is that almost a hundred per cent. are constant to their first love; and to a great extent it is the same with boys who want to become doctors. The Army, I would say, at the moment, seems to be just a little bit suffering, so far as Regular entrants go, from a degree of uncertainty about the future as to whether there is a career there, though lately I have come across many young old boys of schools who have signed on and intend to stay in the Army. The R.A.F. is up against the trouble it has had all its life that, from the point of view of the parents who, after all, have something to say about it, it has seemed less of a good bet than the other two Services, partly because it is thought to be so much more dangerous, and mothers do not always like that; and, secondly, many a hard-headed father takes the line that he cannot quite see where it all leads to: "When your flying days are over, what happens to you then? When you come out of the R.A.F., what happens then?" Of course, if you have been a distinguished soldier or sailor you can always get a job either as bursar in a Public School or as secretary of a golf club! It has not yet got around to the R.A.F. But those are the only obvious points that strike us at our end as to the actual supply.

With regard to selection, so far as the Navy is concerned we are familiar with the

Special Entry examination, and for my part I think it is a very good one. If this is not too delicate ground or too tricky water, I have heard it said by distinguished sailors that they would like to see the whole of the Navy's officers recruited by the Special Entry examination and not from Dartmouth entry at all, but that is not for me to say.

So far as the 16-year-old Dartmouth entry is concerned, we have not much experience of that yet. It is going to be awkward for us, there is no doubt about that. It means that quite a lot of bright and promising 16-year-olds will be swept away from us, and we do not like that; and also that we are going to be asked to give a very detailed and profound account of these children at that age when it is a little bit early to have decided whether they are blessed with leadership qualities and whether they have held any important offices in their houses or schools. It was always bad enough with the naval candidates earlier on in the days when they went in younger. It was very embarrassing always to have to write of a boy that he had not yet in fact been captain of his house or led the school first eleven, when the simple fact was that he was too young to have done so; and we shall have a similar trouble, I know, with the Admiralty or Civil Service Commission about the 16-year-old entry into Dartmouth. However, we know that a most awkward situation would arise if all the boys from what are called Public Schools stayed on and did the Special Entry way in and none of them did the 16-year-old entry which boys from other schools were taking; so we do intend—all of us that I have heard and seen—to try to make it work, awkward though it is going to be.

As far as the Army goes, I do not think I need say anything about the Regular officer, because I know he is in very good hands. The National Service officer I think we do have a good many doubts about sometimes. I am delighted to hear from General McCandlish that they are very anxious at the moment to avoid any waste of time in spotting the National Service man who ought to be commissioned. We, of course, have made a good deal of fuss about that over the past two or three years, and I do not think General McCandlish will deny that there has in the past been a good deal of waste of time (*a*) in spotting the right people, and (*b*) in dealing with them after they have been spotted. I know particular cases are misleading, but I have in my mind at the moment at least four young men, two of whom have been head of a not perhaps unknown Public School, and they have been kept kicking about in the Army so long that they in the end very nearly packed up altogether and very nearly said, "Well, what the hell." They did not, and I am very glad they did not; it would have been pretty scandalous if they had; but it all goes back to this business of how much attention is going to be paid to pre-Service training. It is not going to be much good, honestly, if we spend a good deal of time and a quite considerable slice of the taxpayers' money in making a small number of people militarily different from others if, when they go in with all the others, they are to be treated exactly alike. There is a perfectly good argument for treating everybody alike, and a perfectly good argument for making some different. I can see no argument for making some different and then treating them all alike. There are leadership training battalions which have solved that problem to a great extent and I hope they will not disappear. I feel I shall go back very much encouraged at the prospects of Commissions for the National Service boys.

I do not want to say anything about training because that would be a presumption, but a great many boys and intelligent masters are asking this: is it or is it not the case that, with the increasing specialization and mechanization and, if I may offend Petty Officer Herbert, "technicalization" of the Army, there is going to be a danger of the officer in the Army falling away from the traditional job and I am sure the right job that he has to do—looking after his men and managing them?

Air Vice-Marshal Baker quite rightly put the R.A.F. difficulty about this functional organization, and one sometimes wonders why they have to have officers in the R.A.F. I suppose the only reason they have to have junior officers is so that enough will survive to become senior officers.

MAJOR-GENERAL J. D. SHAPLAND (*Commandant of the Military College of Science*): I would like to confine myself to two aspects of the Military College of Science.

The College is now established at Shrivenham, near Swindon, and is run on University lines. The Dean of the College—Dr. Lander, who is here—was Professor of Engineering at Imperial College, London University. We cater at the moment for two types of student: the first, as mentioned by General McCandlish, is the young officer from Sandhurst. At the moment we have no student officers from the R.M.A., simply because the batch has not yet passed out, but we are dealing with a number of young officers who, owing to the War, were unable to go to Universities for training. We have now a hundred under instruction and they enter the College at inter-standard, do two years and leave, we hope, with an external degree—Engineering B.Sc., London University.

The second type, of course, is different, but it is linked with the Staff College. We have now 150 officers who are destined to be Technical Staff Officers for the Army and the Ministry of Supply in the near future. They do a two years course with us. The entrance is about inter-standard, and their course is first year fundamental and the second year applied science. That, I think, answers the point made by the last speaker regarding the technical side of the Army. We are not—and I do not think I am taking the views of the Army Council in vain—trying to take an officer from the Army and make him a pure technician. What we are trying to do is to take the good regimental officer and train him to interpret to the scientist the needs of the user.

MR. A. S. MASON (*Headmaster of Hampton Grammar School*): There is not very much, I think, that I can say except to remind you that in the Grammar Schools, as they are now called, there is a very large proportion of the best brains in the Country, and that is, of course, the well from which you want to draw a considerable number of your people to go into the Army and Navy and Air Force in the officer ranks. The fact that, at the moment, you do not get so many as you might expect by comparison with the number in those schools is, I think, solely due to the fact that it has not crept round those schools that these careers are open to and are possible for such boys. There are an increasing number in my own school who do turn in this direction, and I think there will be more still as the years go on.

THE CHAIRMAN

Everyone will wish me to thank the representatives of the three Services for the admirably clear and concise statements which gave our Discussion such a good start. Everyone will agree also that the galaxy of authorities whom the Secretary has managed to assemble gave us brilliant and amusing addresses, and much food for thought.

The main impression made on me is one of great admiration for the way in which this very difficult problem has been tackled by the Services in very difficult circumstances: I allude to such factors as the advent of a term of compulsory service in the ranks, which is already short and is going to be shorter—too short for efficient training, and also to the outside pressure for service in the ranks as the pre-condition of a peace-time Commission. Those conditions, to the best of my knowledge, were not imposed on military advice as being essential to efficiency but by higher authorities for reasons that are inappropriate for discussion in this Institution. I shall limit myself to saying flatly that in some of these matters I am a heretic.

On the importance of adequate time for military training I would like to quote from Plato: " Nothing can be more important," he says," than that the work of a soldier should be well done. But is war an art so easily acquired that a man may be a warrior who is also a husbandman or a shoemaker, or other artisan; although no one in the World would be a good dicer or draughts player who merely took up the game as a recreation and had not from his earliest years devoted himself to this and nothing else. No tools will make a man a skilled workman or master of defence nor be of any use to him who has not learned how to handle them, and has never bestowed any attention

upon them. How, then, will he who takes up a shield or other implement of war become a good fighter all in a day, whether with heavy-armed or any other kind of troops?"[1] If that was true of the primitive armaments of the IVth Century B.C., how infinitely more it is true to-day!

After listening to this discussion, my impression is that the Army has the hardest task of the three. The Navy seems to be comparatively free from some of the greatest difficulties and to be able to adapt the more important features of its former system to its modern needs by means of a process of evolution, as in the past. The way that has been done presents notable features, to which I shall refer presently. Also the R.A.F., although throughout its history it has had to provide for progress of vertiginous velocity, is nevertheless able to proceed on evolutionary lines, largely owing to the fact, mentioned by Air Vice-Marshal Baker, that Lord Trenchard provided for temporary service officers, who proved a factor of the greatest importance in building up reserves and in war expansion; but, if you are comparing with the Army, do not forget that the temporary service of the R.A.F. was for five years, and I am sure that that would make General McCandlish's mouth water—to have five years to train his officers. In contrast, the problem of the Army's officers seems much more complicated, and the innovations I mentioned fall upon them with their fullest impact because they have not only to provide, as in the past, permanent officers for an army more or less of a pre-war type raised on a voluntary basis so far as they can get the recruits, but they must also train for the compulsory service army a large number of National Service and Short Service officers in order to provide for the large requirements of mobilization, reserves, expansion, and so forth. Anyone, then, can see what a blow is the reduction to twelve months service.

The spokesman for the Army put his finger on the vital point when he suggested a topic for discussion, which I do not think anybody has followed up, namely whether the Regular officers should all serve a period of several months in the ranks before being segregated, or whether they should be sent to a special O.C.T.U. unit where they would be given a pre-Sandhurst training together. Again, I repeat, I am probably rather old-fashioned and a heretic about the popular ideas on that subject. I believe that the pre-war system, where officers went straight from their schools to Cranwell or Sandhurst or Woolwich and thence direct to their units, was better from the point of view of efficiency than anything we can put up to-day. I do not say that system is applicable to-day, but I believe it was a better system. You took these young men at the formative stage of their careers; they had completed the preliminary phase of their education and reached a stage when they ought to be learning to teach themselves, because really the object of education is to teach yourself; you should be educating yourself all your life; I am educating myself every day. The spokesman for the Navy, when he was speaking of the Greenwich course, mentioned that young officers were "taught self-study" or "learned self-study."

I do not know anything wrong with that old system, and I do not know whether those responsible for the change ever considered it historically. I have studied the history of our Navy and Army and latterly of our Air Force, and, as far as I can make out, our strong point has always been our officers. They not only hammered into good sailors and soldiers the riff-raff of the press-gangs of Nelson's fleet and Wellington's army, but they provided admirable leadership all through history up to the most recent times for troops of every continent and nationality and colour. Never was the old system better justified than in the last war, when the leadership, which was extremely good in all three Services, was almost entirely in the hands of the old system officers. In the main they came from the same classes as our leaders throughout our history, but there was, as in past wars, always a valuable leavening of leaders of great distinction who had risen from the ranks: and I am all for the inclusion of officers from the ranks; but I want to bring in young men from all levels.

Coming back to the problem posed by the military spokesman, I favour the second

[1] *The Republic of Plato*, Book II, 374C. Translated by B. Jowett.

alternative—that the men selected as permanent officers should be sent to special units; that seems to me a very good compromise and a good second best to the old system.

There are a lot of other features in these systems on which one would like to comment. I have always been rather dubious about the "WOSBY system," but I should be glad to be converted by the General. I do not know very much about it, but to be frank, I have a lurking suspicion that excellent results were obtained from Jackie Fisher's dictum, "Favouritism is the secret of efficiency"; so you can condemn me as the very last word in antediluvianism. But, short of that, I prefer examination by interview in accordance with the pre-war naval and Foreign Office systems, which gave good results.

I have a minor criticism of these schemes, namely that not a word has been said about the study of military history. I would like to have got Captain Falls on his legs about this, but time did not permit. Possibly military history, including of course naval and air force history too, may be included either under "professional subjects" or under the general term "history" which appears in some of the programmes; but the study of military history is enormously important.

If I have made a few criticisms, directed more perhaps against the political framework into which the plans have had to be fitted than the plans themselves, it is all the more satisfactory to be able to draw attention to some very admirable features.

Besides the continuance of naval tradition in the Admiralty's scheme already referred to, I would draw attention to the use of jolly terms like "Upper Yardsman" and so on, the essential early sea service on the cruiser and the Midshipmen's service in smaller ships, where they can get a bit of responsibility which is so important to character building. Another interesting feature is that in my own former Corps—the Royal Marines, all are now trained in combined operations, which is an obvious logical development. Also I like this idea of Greenwich being a Naval University.

Another point is the resort of all the three Services to the Civil Service Commissioners' examinations and the School Certificate as a general educational standard. I think that is very valuable. I am also pleased to learn of the development of Sandhurst into one great Cadet College for Regulars and career officers, and again I welcome the Military College of Science, which, in its way, is a sort of University or technical college for the Army. Then there is the recognition by all Services of the value of University training. I am sure that is tremendously important. At present it is emphasized more on its technical than on its art side, but I feel that graduates in the arts are really needed also, especially for the General Staffs and eventually the higher control of war.

Turning to the technical side: I think the arrangements of all the Services seem calculated to bring a good deal of science into them and to bring them closer to the Universities—for example, the training of Electrical Engineers for the Navy. I am sure that is an admirable development. But the present post-war problem is really so weighted by the shortage of engineers and scientists and the immense demand there is for science for industry and for the export drive and so on that I do not think it is much good to pursue that branch of the subject very far to-day. All we can say for certain is that in the wars of the future the whole of the Services must be permeated with the scientific spirit. As the result of the experiences of the last war, I think to a great extent, that is the case, but it has got to be maintained. As soon as the output of Universities and technical colleges is large enough to produce scientists and engineers for all purposes—for civilian as well as Service needs—the Services, I prophesy, will have to take an even larger proportion of these categories, not merely to provide permanent officers for the technical branches, but also to provide a certain number of scientific officers for eventual absorption into the General Staff and High Command. That would be a counterpart in the Services of the movement that is going on in industry to get scientists on to the boards of directors and managements of industries.

I hope those developments will not have to be too long delayed, but I am afraid we are in a vicious circle due to the shortage of teachers in the schools. The expansion

of the Universities is threatened by a bottle-neck in the shortage of lads coming forward sufficiently scientifically trained from the schools, for the simple reason that the schools cannot get the teachers. The result is a shortage of scientists until we can clean up the situation. It is only necessary to recall a short list of those weapons of future warfare, knowledge of which is public property, to realize the importance of this permeation of science: atomic warfare, submarine and mining developments, jet bombers and fighters, rockets and other flying weapons, radar and flame warfare. One has only to consider those, without exaggeration or hysteria, to realize how tremendously important for the Services it is to get science ingrained in them. It does not require much imagination or scientific knowledge to guess that the grim potentialities of all these weapons will be exploited by scientific research and development in every nation in the World to such a pitch as in time to alter in no small degree the means by which victory is won.

I do not, however, think we have anything to fear if we are reasonably prescient for our scientists are second to none. We must give them the tools and, above all, we must permeate the Services with the knowledge of weapons of the future without neglecting those of the present day; because the transition may be much slower than some people think, and we cannot afford to have a gap during which we possess the weapons neither of the present nor of the future.

To conclude: the ideal is to tap all branches of our national life for our officers. We have got a splendidly organized national education, with our Universities at the top and our Public Schools and the Grammar Schools and the Secondary Schools, and Primary schools at the base, and therefore we must get our officers from all ranks. On the whole, the arrangements we have listened to to-day are working steadily in that direction; they will be improved as time goes on, and adapted, and changes will be made with experience; but as a foundation they fill me, in spite of some criticism, with confidence and hope. (*Applause.*)

The following letter is published here, instead of in "Correspondence," for convenience.—EDITOR.

To the Editor of the R.U.S.I. Journal.

SIR,—I wonder if you would permit me to make a point which I did not have an opportunity of making during the interesting Discussion that followed the statements by the Services of their plans for the selection of officers at a recent meeting at the Institution. It is that it seems deplorable to many of us that a career in the Services should mean that a boy leaves his school earlier than he would need to do for other careers. A boy's life at a Public School should be regarded as an organic whole. It should not be light-heartedly lopped. It is at the very end of his time that he has a chance to exercise authority, to run his house, to captain sides, to be a school prefect or a senior N.C.O. in the Corps, where, incidentally, he will do the most valuable and interesting work as an instructor that will come his way until he is actually gazetted, for he will be instructing those who do not know all the answers already, as they always do at O.C.T.U's and Military Colleges. It is this last phase that counts out of all proportion to its actual duration in weeks and months, and without this finish the Public School training is, comparatively speaking, a poor thing. That the Services realize this is proved by the questions they put to us about our Service candidates. Yet they all either insist that a boy should lose his last term or terms, or at any rate tempt him to do so.

The most gross case is, of course, that of the new Navy entry at 16, and it is hard to share the optimism of the Headmaster of Shrewsbury on this subject. After all it is the boy and his parents, not the school, who decide when he shall take the Navy exam. Boys of 16 who are doing well at their schools, are happy there and wanted there—the type in fact that the Navy also wants—will surely be tempted to wait for the Special Entry if they have the brains to be pretty certain of succeeding at it. Boys who are

not doing so well and are not so happy and not so intelligent, may no doubt peel off earlier. But is that what the Navy wants? However, all this is so obvious that one can only suppose that the change of the age limits is "political," in the sense that it was not made purely in the interests of getting the best officers for the Service. There have been plenty of similar cases recently.

The same is true to a lesser extent with the Navy Special Entry and with Sandhurst. Would it not be wiser to give each candidate not two but one chance only of passing in, and to make this as late as is consistent with his being gazetted at a reasonable age? At present the candidate is faced with the problem of whether he shall take his *first* shot or not. He would like to stay on at school another six months, to be head of his house and so on. But supposing he does not take his first shot, and is ill for his second, or something else goes wrong, how will he look then? And if his father is a regular officer of a certain age, he is quite sure to be a victim of an obsession that no amount of regulations about promotion to command by merit seem ever to dispel, namely, that his boy *must* be gazetted at the earliest possible moment or he might just miss the command of his regiment, because someone else's boy took his first shot. The point that with another six months at school the boy will make infinitely more of his Sandhurst career, will pass out fifty places higher, will be welcomed by his regiment as someone really worth having, never seems to weigh for a moment against this *idée fixe*. So every year a number of boys unwillingly and unwisely take their first shots, and the Services get a worse bargain with most of them. With one shot only, this problem would not arise, and should illness prevent the boy from taking the actual exam., the method of entry through the ranks could, where a Headmaster can state that the boy was as good as others who had got in, be speeded up so that he went to Sandhurst with his peers.

Lastly, can nothing be done to speed up the work of the Civil Service Commission? At present a boy examined for the Navy in June is still unaware half way through the following September if he has passed in or if he is to come back to school for the September term. The Sandhurst candidate is only better off because, owing to the shortage of good entrants (which may not of course be permanent), he can be told, if he passes his W.O.S.B., that he is accepted. Under present circumstances when boys competing at under 18 want a vacancy kept for them in case they fail to get in, such delay is at least extremely discourteous to the school, who get the required information only at a time when they cannot conceivably fill the vacancy, if the candidate has been successful. Unfilled vacancies cost money, and that is short at schools at present. There is no doubt that the delay is unreasonable, even considering the necessity for candidates to go to W.O.S.B's. If, however, it is held to be inevitable, the date of the actual examination should be put earlier, say in March, not June, for a boy who will be called up in September. Above all let us avoid the same awkwardness over the 16-year-old Navy candidate.

J. W. PARR,
Major.

Winchester,
23rd November, 1948.

IRELAND'S NAVAL POLICY

By CAPTAIN FERGUS N. FITZGERALD (late Irish Cavalry Corps)

ONE of the questions of our school-days was, " Why is Britain a naval Power ?" The answer was the essence of simplicity—" Because she is an island." Ireland is also an island, yet after a quarter of a century of independent status the Twenty-Six County area has shown no tendency to become a naval Power. The schoolboy answer obviously requires some qualification.

Having no overseas empire or colonies there is little impetus to turn Irishmen's minds towards the sea and, apart from those families who have traditionally served in the Royal Navy, we lack the seafaring habit. Even our coastal fisheries are to a great extent neglected. Accordingly, during the brief period of independence we have consciously or unconsciously relied upon the British Navy to protect our coasts, and even upon the British Merchant Navy to carry our supplies. Irish merchant-shipping companies are minor concerns, and only necessity drove us during the late war to make an effort to fend for ourselves by expanding our small merchant fleet. However, the merchant fleet has come to stay, and with it we must accept an increased measure of naval defence.

Her geographic position across England's western flank gives Ireland a peculiar strategic importance to Britain, and especially to the Royal Navy. In *The Influence of Sea-Power upon History* (1890) Admiral Mahan, wrote " Ireland by geographical position lies across and controls the communications of Great Britain with all the outside World . . . save the North Sea." But the Admiralty was aware of the importance of Ireland's situation long before these words were printed. In every war between Britain and another Power for control of the seas Ireland has figured largely. In turn Spain and France, and more recently Germany, exploited nationalist feeling in Ireland to Britain's disadvantage. " In the wars between the French and English, the former on more than one occasion endeavoured to stir up rebellion in and gain possession of Ireland," Major-General Bird pointed out this in *The Direction of War* (1925) ; and in his *Imperial Military Geography*, Major D. H. Cole wrote in 1924, " A strong hostile Power in control of the many admirable harbours of Ireland might . . . make access to the ports of Cardiff, Swansea, Bristol, Liverpool and Glasgow difficult. If that hostile Power were in alliance with France, the situation would be more serious, for the whole entrance from Queenstown to Brest might then be unsafe . . . " In 1940, with Southern Ireland neutral and France occupied by (and therefore " in alliance " with) Germany, the situation visualized by Cole became a reality.

Because Southern Ireland possessed no substantial naval force herself and because the Royal Navy is an exceptionally silent and unboastful Service, Irishmen during the 1939-45 War were never fully awakened to the vital importance of the North Atlantic—not alone to Britain but also to Ireland. However, latterly recognition has been given, albeit rather grudgingly, to the fact that our economic life was preserved by the British warships and merchant vessels which faced the submarine and air menace during the six years of war. And so a new naval policy for Ireland is developing.

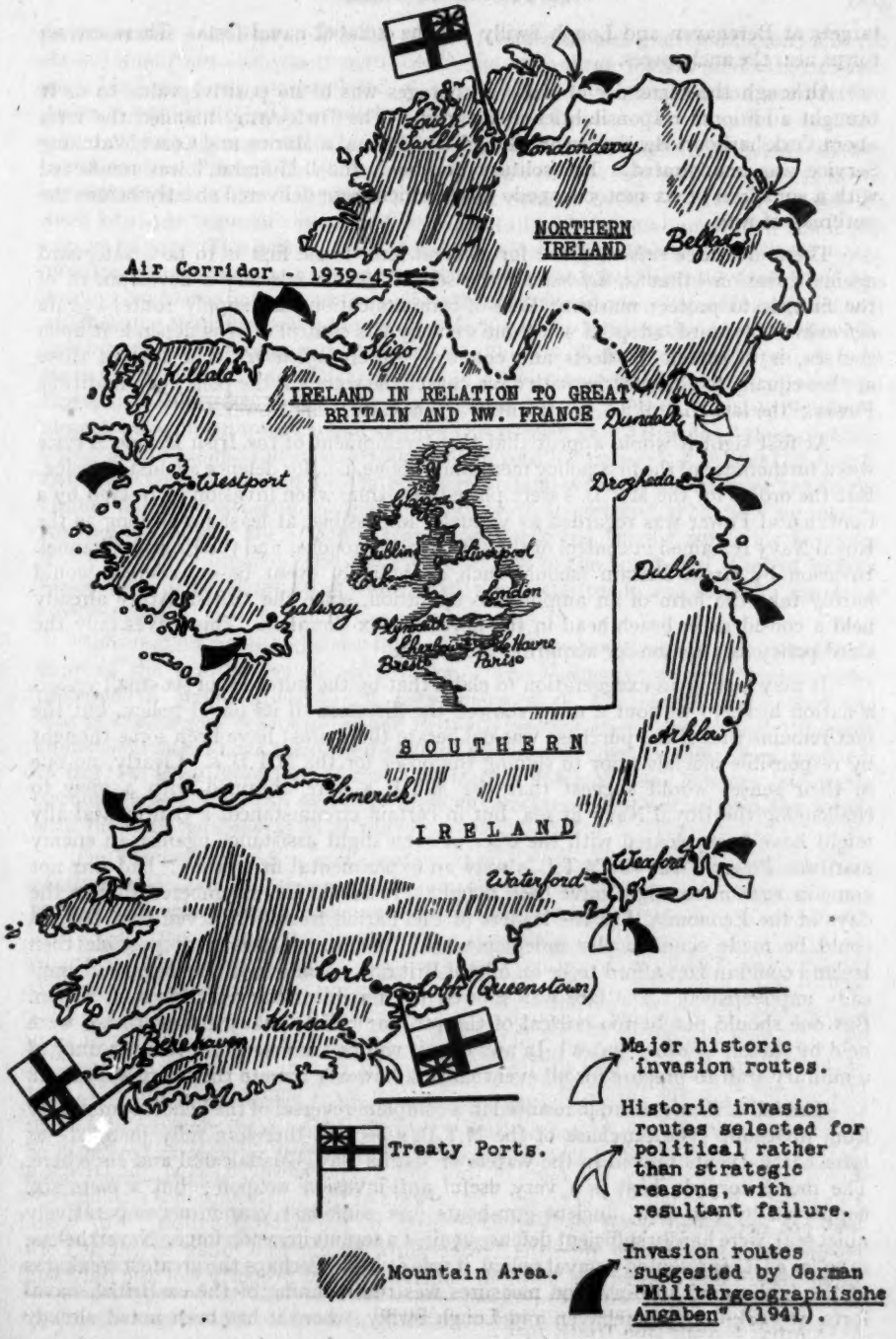
When the Anglo-Irish Treaty of 1921 was drafted, the Admiralty, still conscious of the narrow margin by which victory at sea had been secured in the 1914-18 War, included in the treaty terms the retention of certain anchorage and dockyard facilities in Ireland.

Although Southern Ireland showed little interest in naval affairs and the Army was strictly reserved for fighting at home, there has been since the signing of the Treaty an unconscious naval policy—a policy which underwent more than one complete reversal. To follow the development of this policy it must be clearly understood what were the famous "ports" which at times during the late war caused caustic comment to be hurled across the Irish Sea. There were three Treaty Ports in the Twenty-Six Counties—the anchorages at Berehaven (Bantry Bay) in the South-West, Lough Swilly in the North-West, and the anchorage and dock-facilities at Cobh (Queenstown) on the southern coast. If one compares the location of these harbours with the historic invasion routes and the invasion routes recommended by the German *Militärgeographische Angaben über Irland*,[1] captured at Brussels in 1944, one will note that the British selection of the Treaty harbours was not made with a view either of defending or (if necessary) invading Southern Ireland. (See Map.) The Cork-Cobh base, which was mainly retained as a convenient repair and maintenance depot, although it appears to form a good means of entering the country, is not recommended by the *Militärgeographische Angaben*, except in the case of a peaceful occupation of the country, on account of the difficult terrain and good defensive positions in the hinterland. Berehaven and Lough Swilly possess no land communication nets to serve them and have only poor dock facilities. It is clear, therefore, that the sole use of these three "ports" could be as land-locked harbours where naval vessels might assemble or remain concealed.

The Treaty provided that, ". . . The foregoing provisions of this Article [dealing with defence by sea of Great Britain and Ireland] shall be reviewed at a Conference of Representatives of the British and Irish Governments to be held at the expiration of five years from the date hereof with a view to the undertaking by Ireland of a share in her own coastal defence."[2] At the Imperial Conference of 1926 the matter was accordingly referred to, and in the following year a delegation of Irish Army officials discussed the question with representatives of the Admiralty. However, beyond suggesting that the Irish government should undertake certain coastal defence responsibilities, such as mine-sweeping, no conclusions were reached—partly because it was felt by the Irish government that they could not impose further (and in those pacifist days, unnecessary) expense upon the national income.

In 1932 the *Fianna Fáil* party came into power in the Irish *Dáil* and as a result of the policy of this party the "Economic War" with Britain commenced. In 1938 the Economic War ended with a partial surrender on the part of the Irish government. Chiefly to cover this defeat, the Irish delegation at Whitehall persuaded Mr. Chamberlain's government to evacuate the ports. The evacuation was given much publicity in Ireland, although, unless we intended to build a large navy, it was of no positive value to us: we could not use the anchorages ourselves, for we had no fleet; all we could do was to deny their use to Britain. There were some—less optimistic about the future of world peace than Mr. Chamberlain—who held that, in the fast-approaching war, occupation of these ports by the Royal Navy would have made it impossible for us to remain neutral and that their evacuation was therefore a boon to Ireland. The cases of Iran and Egypt, however, prove the fallacy of this belief. In the late war neutrality was always at the beneficence of the belligerents and not dependent upon the expressed wish of the neutral nation. Nor would enemy air or sea attacks upon the Treaty ports, except to a minor extent at Cork-Cobh, have done any serious material damage to Irish property, for the only land

[1] Compiled by the German General Staff in 1940-41.
[2] Article 6, Anglo-Irish Treaty, 1921.


Lough Swilly
Londonderry
NORTHERN IRELAND
Belfast
Air Corridor - 1939-45
Sligo
Killala
IRELAND IN RELATION TO GREAT BRITAIN AND NW. FRANCE
Dundalk
Westport
Drogheda
Glasgow
Dublin
Liverpool
Cork
London
Galway
Plymouth
Le Havre
Brest
Paris
Dublin
Arklow
SOUTHERN
Limerick
IRELAND
Waterford
Wexford
Cork
Cobh (Queenstown)
Kinsale
Berehaven
Major historic invasion routes.
Historic invasion routes selected for political rather than strategic reasons, with resultant failure.
Treaty Ports.
Mountain Area.
Invasion routes suggested by German "Militärgeographische Angaben" (1941).

targets at Berehaven and Lough Swilly are the isolated naval forts. There are no towns near the anchorages.

Although the surrender of these anchorages was of no positive value to us it brought additional responsibilities in its train. The Irish Army manned the forts about Cork harbour, Berehaven and Lough Swilly, and a Marine and Coast Watching Service was inaugurated. The solitary gun-boat, the "Muirchú," was reinforced with a squadron of six motor torpedo boats which were delivered shortly before the outbreak of war.

There are three *raisons d'être* for a naval force: the first is to be a safeguard against invasion—that is, *defensive*; the second, which is really a development of the first, is to protect maritime lines-of-communication and supply routes—again *defensive*; the third, adopted when one's enemy has control of or is dependent upon the sea, is to attack his fleets and convoys—purely *offensive*. The first of these applies equally to all countries with a sea-coast; the second is the policy of a maritime Power; the last that of a "Continental" or navally weak Power.

At first sight it would appear that the development of the Irish Marine Service was a furtherance of the first policy mentioned above, i.e., for defence against invasion. But the orders for the M.T.B.'s were placed at a time when invasion of Ireland by a Continental Power was regarded as virtually impossible, at least for so long as the Royal Navy remained in control of the Western Approaches and the English Channel. Invasion by Great Britain (should such an unlikely event be considered) would hardly take the form of an amphibious operation, since the British Army already held a considerable beach-head in the northern Six Counties. This leaves only the third policy as a reason for acquiring these craft.

It may be a gross exaggeration to claim that by the purchase of six small vessels a nation hitherto without a navy showed the direction of its naval policy, but the fact remains that if the purchase was deliberate there must have been some thought by responsible officials prior to signing the order for the M.T.B.'s. Clearly, no one in their senses would suggest that the M.T.B.'s were obtained with a view to challenging the Royal Navy at sea, but in certain circumstances a Continental ally might have been pleased with the offer of even slight assistance against an enemy maritime Power. The six M.T.B.'s were an experimental first order; had war not come in 1939 more might have been bought. It should be remembered that in the days of the Economic War the leaders of this nation frankly believed that Ireland could be made economically independent of Britain. If this were possible then Ireland could in fact afford to be an ally of Britain's enemies without being economically impoverished. The late war showed the terrible fallacy of this supposition. But one should not be too critical of the pre-war belief—many stranger ones were held by leaders of other states! In any case it will be admitted that it is the duty of a military staff to prepare for all eventualities, however remote they may appear.

The fall of France in 1940 resulted in a complete reversal of the belief of immunity from invasion. The purchase of the M.T.B.'s became therefore fully justified—as later battle-events proved in the waters of Manila Bay, Guadalcanal and elsewhere. The motor torpedo boat is a very useful anti-invasion weapon; but a mere six, supported by two slow, ancient gun-boats (one sank last year in a comparatively quiet sea), were hardly sufficient defence against a serious invasion force. Nevertheless, in so far as it represented a naval policy, it was sound. Perhaps the greatest weakness of the Irish naval anti-invasion measures was the manning of the ex-British naval forts at Cork-Cobh, Berehaven and Lough Swilly, where it has been noted already

invasion was least likely. But the gun-emplacements and guns were there, and the line of least resistance was to man them. To move them to more advantageous sites was, I believe, never contemplated, although certain harbours, such as the Waterford estuary, were protected by smaller naval pieces.

In 1921 air power was in its infancy. However, the Anglo-Irish Treaty showed an awareness of future developments in the two clauses requiring " Facilities in the neighbourhood of the . . . Ports for coastal defence by air," and " A Convention shall be made between the same Governments for the regulation of civil communication by air." The first of these clauses was not implemented during the 1939-45 War since the ports were no longer in use, but on the other hand the Irish Air Corps was in a far better position on the outbreak of war as regards equipment and standard of efficiency than the newly-formed Marine Service. Incidentally, the Irish government during the late war gave permission to the R.A.F. to fly on armed patrols from bases at Lough Erne in Northern Ireland across the ten-mile stretch of southern Donegal (Twenty-Six County territory) direct to the Atlantic Ocean. Similarly, aircraft being flown from Canada and the U.S.A. used this " corridor," thus avoiding a long detour around the northern coasts of Ireland. Further, R.A.F. and U.S.A.A.F. aircraft making forced landings in Southern Ireland were permitted to return to the United Kingdom either under their own power or, if damaged in landing, by road to Northern Ireland. These facilities were very welcome, but of course air bases for R.A.F. Coastal Command and the Fleet Air Arm in the South and West of Ireland would have been of far more value, had they been made available by the Irish government.

Information published since the end of the War has given us a more balanced view of the possibilities of an invasion. The Germans, we now know, never prepared to invade Ireland, but preliminary work was carried out. Had the War in Russia gone otherwise, or had Britain's reaction after Dunkirk been different, an invasion might have been attempted in spite of the enormous difficulties involved. In fact, the invasion of Ireland by a Continental Power is possible under favourable circumstances. Who can say that these circumstances will not arise in the future with the same suddenness as in 1940 ?

On the other hand, a more serious threat during the War was the German offensive upon our maritime supply lines, for our supply lines and those of Great Britain, through geographic accident, must always be identical.

Last year the Irish Government purchased six British corvettes, of which one has been delivered and two more are due for delivery soon. Crews are being trained at British naval stations. At the same time, the Marine Service has been reorganized as a Naval Service. Do these things indicate a further change of policy ? The corvette is essentially an anti-submarine vessel and of no use for countering an invasion force or for carrying out raids against surface shipping. It is the weapon of a maritime Power which fights to *maintain* naval supremacy. The purchase of such ships can only mean, either that we intend becoming a naval Power (this may be dismissed at once) or that *we contemplate liaison and alliance with a neighbouring naval Power*—that is, with Britain.

The late war brought home to us forcibly that, however diverse our political views, the economic future of these two islands is linked for all time ; geography, not political preference, directs our choice. Towards Britain we look : the fate of the English pound, or of the British export market, or of the Royal Navy, concerns us almost as much as it concerns Englishmen. Many people in Ireland were aware of

this at the time of the Treaty, and the members of the government, at least some of whom tried in the past to escape from this fact, have now frankly admitted its truth.

If we are economically tied to Great Britain, and if our outlook on international issues remain similar (as seems most likely), then military and naval co-operation are clearly necessary. One of the reasons for the rapid fall of Belgium in May, 1940, was the absence of pre-invasion liaison between the Belgian staff and the Allied command. Realising this, the Imperial General Staff formed the Eighteenth Military Mission in Northern Ireland late in 1940. This Mission met officers of the Irish General Staff on various occasions to discuss united anti-invasion measures. The formation of a naval Mission on similar lines is to be recommended, especially since our recent purchases suggest that a new naval policy is in view.

Our first policy (1921-1932) was a negative one which in effect left all the burden on Britain. Then the Economic War produced an anti-British tendency (although nothing was formulated, the naval policy of this period seems to have leaned towards *offensive* strategy). The late war made us invasion-conscious, and defence of our own shores was given first place. Finally, the reorganization of the Naval Service and the delivery of corvettes suggest that we are considering taking our share in anti-submarine and perhaps even in convoy work; this can only mean as Britain's allies.

The extent of our aid to the Royal Navy in time of war would be very slight, but it is not to be disregarded. In the years 1940-1943, every naval vessel the Allies could procure—not only British and American, but Dutch, Belgian, Norwegian, Greek, etc.—was vitally required and vitally employed against the U-boat menace.

Of course, in any future world conflict we may again seek to remain neutral, but if war is thrust upon us, or the ideological issues are sufficiently powerful to oblige us to abandon neutrality voluntarily, there is no doubt with which side we must ally ourselves. Therefore, in the present stage of world development, Ireland at war is Ireland allied to Great Britain, with the Irish Naval Service operating in unison with the Royal Navy. It would seem reasonable, in view of this, that there should be close co-operation *now* between the Naval Service and the Admiralty with regard to the extent of national responsibilities, the type of vessels which should comprise our small fleet, etc.

In 1936, a former Director of Naval Intelligence at the Admiralty wrote in the *Observer*, " . . . Ireland flanks the approaches to England and Scotland, and it is imperative that we should be assured of access to both Irish territory and harbours in the event of hostilities. This is a vital point of security." The late war proved the truth of these words, and the price of not having access to Irish territory and harbours was a costly one. If this is not to occur in a future war it is essential that there should be a correct understanding by all concerned of both sides of the problem. Britain's advantage is also Ireland's advantage.

SWORDFISH SAGA

By Lieutenant-Commander C. B. Lamb, D.S.O., D.S.C., R.N.

WHEN the Royal Naval Air Service and the Royal Flying Corps were amalgamated in 1918 to become the Royal Air Force, approximately 55,000 naval officers and men, some 2,500 aircraft and nearly a hundred naval air stations were transferred to the new Service. By 1921, after a great deal of experience had been gained, the original conception of an entirely separate air force to meet naval, as well as all other requirements, was found to be unpractical, so, though still an Air Ministry commitment, the training of pilots and observers from the Navy began again in greater measure. A small unit of Service aviation made up of R.N. and R.A.F. personnel was formed and came to be known as " The Fleet Air Arm of the Royal Air Force."

Until 1937 the development of aircraft for naval purposes was the responsibility of the Air Ministry. Much effort was devoted to it, but the necessity for reduced expenditure, together with the urgent requirements of the R.A.F. itself, combined to put the demands of Naval Air into the background. During the period 1921-1933 naval air technique was narrowed to eight basic essentials :—

1. Reconnaissance in search of the enemy fleet.
2. Tactical observation of the enemy at sea.
3. Day and night shadowing of enemy ships.
4. Convoy escort duty.
5. Anti-submarine searches and attacks.
6. Observation of naval targets and spotting the fall-of-shot from naval guns.
7. Torpedo and bombing attacks on enemy shipping.
8. Defence of the Fleet from enemy air attacks.

In 1933, an aircraft was designed to combine and fulfil all the above functions except the last. The combination of so many roles in one aircraft was such a revolutionary experiment that Mr. (now Sir) C. R. Fairey, of the Fairey Aviation Co., decided to build it as a private venture. The chief designer was Mr. Marcel Lobelle. By 1934 this aircraft, officially called the " T.S.R." (Torpedo-Spotting-Reconnaissance), had been test flown. In 1935, when an Air Ministry production order was placed with Fairey's, it was officially named the " Swordfish," and in 1936 the Swordfish aircraft was flown by the Fleet Air Arm for the first time.

To quote briefly from B. J. Hurren's *The Swordfish Saga*, which gives the whole story of the Fairey Aviation Company's prototype and of how the initial difficulties were overcome . . . " The " Swordfish " began . . . as an idea developed by two men of vision . . . None of those pioneers . . could have foreseen the astonishing results which were to derive from their endeavour, their faith and their enterprise . . . Other aircraft, on paper, surpass its performance : they are faster, can fly higher, can carry more load and travel further. But none of these, though developed years after the " Swordfish," have achieved anything like the remarkable record which this torpedo-bomber has established for itself. Although in the light of technical advance it was obsolescent before the War broke out, it was the only first-line operational aircraft to be " in at the beginning and in at the end " of the War. This is the more astonishing in that it remained substantially the same aircraft, although it carried every type of armament and reconnaissance device, from bomb to search-light, from rocket to radar . . . "

Development and supply of all aircraft for the Navy continued to be an Air Ministry commitment until 1938, when, after many years of vain insistence, the Admiralty recovered full responsibility for the development of naval aircraft and aviation, and the " Fleet Air Arm of the Royal Air Force " ceased to exist. Owing to popular habit the term " Fleet Air Arm " stuck throughout the war years, and it was not until 1946 that the term " Naval Aviation " was officially adopted. But as all link with the Air Ministry and the Royal Air Force had been severed in 1938, the title " Fleet Air Arm " was really a misnomer throughout the War.

The Fairey Aviation Company continued to supply " Swordfish " for the Admiralty, but there was little time to undertake the development of other types of torpedo aircraft before the War began. Subsequent history has proved that the " Swordfish " was to remain the Navy's mainstay throughout the many hazardous years which followed—the expiation of those between-war years when the development of naval aircraft was virtually at a standstill.

Early in the War the Ministry of Aircraft Production was formed and took over the supply of aircraft to all three Services. The Fairey Aviation Company, besides producing the " Swordfish," were also producing and developing " Albacores " and " Barracudas," as well as " Beaufighters " and later, " Halifaxes " ; so, in January, 1940, this new M.A.P. switched the whole production of " Swordfish " aircraft to Blackburn Aircraft, Ltd. Blackburn's laid the foundations of a new factory for this purpose at Sherburn-in-Elmet, in Janary, 1940. The building and the assembly line grew together, and before the end wall and doors of the new factory had been built and at a time when England was being subjected to the heaviest bombing of the War, the first Blackburn-built " Swordfish " flew off the end of the line on 29th December, 1940.

Many hundreds of the original " Swordfish " produced by Fairey's flew on active service long into the War. But with the exception of sixty-three produced by the Fairey Company, all " Swordfish " built during the War were produced by the Blackburn group of factories, which included many out-of-the-way component part shops manned almost entirely by women and girls. A production rate of forty per month in 1941 increased to a steady average of fifty-five, and went up to sixty-two in June, 1944.

With their knack of naming things, the naval squadrons which flew these aircraft called them " Blackfish."

Powered by the Bristol Pegasus radial engine, and with an undercarriage which could not be retracted, the " Swordfish " biplane had a maximum output of 905 horse-power. Its offensive load of 1,750 lbs. could be bombs, depth-charges, rocket-projectiles, a mine or a torpedo, whichever was equired. All of these were effectively carried against the enemy by " Swordfish " in addition to the crew of three. With all these weight and drag factors to reduce its performance, this gallant aircraft climbed at less than ninety knots and cruised only a few knots faster. No wonder that it came to be affectionately known as " The Stringbag " ; for no housewife's shopping-bag has been crowded with a greater variety of unlikely things.

In the words of its pilots, by " standing a ' Swordfish ' on its tail " with a full load, at a speed in the region of fifty-five knots, it could be " induced " into a leisurely spin. But it could be roughly handled at incredible attitudes of flight without stalling. With the same heavy load, it could be dived steeply at 200 knots with a loss in height of less than a thousand feet from the commencement of the pull-out (a modern clean-surfaced monoplane requires many thousands of feet to

pull-out from a steep dive); and during that 200 knots rush towards earth, with the pilot "standing on the rudder bar and looking over the centre-section of the top mainplane," the aircraft answered the helm just as promptly and easily as it did when cruising along at a gentle ninety knots.

Thus, any of the manifold tasks assigned to the ubiquitous "Stringbag" could be fulfilled with accuracy. There was a jest among "Swordfish" pilots that the enemy had no speed settings on their gun-sights as low as ninety knots, and that they could only be hit by shells aimed at a flight astern. Though this was an exaggeration born of bluff, a target which at one moment is diving at 200 knots and at the next is "standing on its tail" is obviously difficult to hit. But difficult or not, such a slow machine, however manœuvrable, was an easy prey for enemy fighters and a vulnerable target for all. None of the many hundreds of flights which were made by "Swordfish" in the face of the enemy could be termed "routine." Some of them were of imperishable memory; most were heroic.

The very first blow of the War struck by the enemy was levelled at the "Swordfish." On 17th September, 1939, exactly a fortnight after war was declared, the aircraft carrier "Courageous" was torpedoed and sunk with two complete "Swordfish" squadrons on board. The survivors reformed into another squadron with the same type of aircraft, and in the course of the next two and a half years avenged the "Courageous" again and again.

The history of these survivors—No. 815 Squadron, is an encyclopaedic illustration of almost every aspect of what the "Swordfish" achieved during the early part of the War. It is crowded with incident, but can only be presented here in a few bald and unromanticised paragraphs.

Five months after the sinking of the "Courageous" and while awaiting the completion of the fleet carrier "Illustrious," they were to be found operating across the North Sea from the Royal Air Force Station, Bircham-Newton, near the Wash. This period of their history has been described by C. G. Grey—founder-editor of *The Aeroplane*, in an article, published by *The Sunday Express* in 1940, entitled "The Bravest Men I Ever Met." Mr. Grey wrote . . . "Just when the *Blitzkrieg* on Norway had started I was staying at a Coastal Command Station of the R.A.F. which was a regular aeronautical menagerie. The day I got there our newspapers had published maps of our new minefields round Denmark, blocking the German and Danish harbours from which ships had to take troops to Norway. Very rightly our people said: 'Wonderful thing the British Navy. But how did our minelayers or submarines get through the German minefields, and past the German submarines and destroyers and Air Force, to lay those mines?' That evening into the Mess came half a dozen young naval officers. My host told me they were part of a Fleet Air Arm squadron which was at the station on a special job. Later, I was shown what it was and how they did it.

"On the airfield was a squadron of Fairey "Swordfish." The machine was built for fleet reconnaissance and as a torpedo dropper; so it is a weight-lifter, and its best cruising speed is about that of one of the trainers one sees floating around the sky. These "Swordfish" were different. Where the navigator ought to sit was an enormous petrol tank which stuck up above the deck between the pilot and the after cockpit. It took up all the second seat and ended in a blank wall high above where the third seat should have been. There the navigator had to sit underneath a mass of petrol all ready to drown him in flames if an incendiary bullet caught it.

" At bombing-up time, just before dark, instead of the normal torpedo or bombs, huge flat-ended barrels were rolled out on trolleys and fixed between the wheels. These were our magnetic mines, far more powerful and more magnetic than the German mines. Those barrels brought the flying speed of the " Swordfish " down to about ninety miles per hour.

" That night as the rest of us were going peacefully to bed, we heard the growl of the Bristols heading seawards.

" We heard them coming back as dawn broke, and as we ate our breakfasts the " Swordfish " crews were eating their suppers and on their way to bed, all ready to do it again the next night.

" Now figure to yourself that sort of courage ; the ' three o'clock in the morning ' courage, which Napoleon admired in our people ; the machine outrageously overloaded, carrying a mine which would leave nothing to pick up if it exploded in a crash, and carrying a truck load of petrol to give the necessary range ; its speed such that the worst anti-aircraft gunner or searchlight operator could hardly miss it ; its only protection against fighters the fact that it was too slow for them to stay with it and shoot at it ; pilot and navigator without the companionship of a cabin, in open cockpits, lonely and exposed all night at the end of a telephone wire . . . . If ever there was a ' solitude á deux ' the mine-layers in the " Swordfish " had it for most of ten hours at a stretch.

" Those couples deserve to be recorded in history, for they made so much history themselves. They were the bravest men I have met."

That article was published just before the Squadron embarked in the brand new aircraft carrier, H.M.S. " Illustrious," where No. 815 was joined by No. 819 Squadron, also equipped with " Swordfish." Before the " Illustrious " was damaged by bombs in January, 1941, the two Squadrons made many accurate dive-bombing and torpedo attacks against shipping at sea and in the enemy-held harbours of the Mediterranean. In order not to reveal the whereabouts of the Eastern Mediterranean Fleet when these attacks were made, all but one of them were ascribed in the British Press and by the B.B.C. to the Royal Air Force. · The one exception was the torpedo and dive-bombing attack made by these two Squadrons, backed by " Swordfish " from H.M.S. " Eagle," on the Italian fleet at anchor in Taranto harbour.

The " Swordfish " took off from the " Illustrious " at a distance of 170 miles from the enemy coast in two separate waves of twelve and nine. They attacked in moonlight in the face of a strong A.A. defence, and a balloon barrage. The subsequent beaching and abandoning of a " Cavour " class battleship, the damaging of two other battleships and two cruisers, is now a matter of history. Two " Swordfish " failed to return.

On 10th January, 1941, the " Illustrious," with a sadly depleted fighter comple ment, was attacked by Stuka dive-bombers and hit by seven 1,500 lb. armour-piercing bombs which exploded inside the ship. The two " Swordfish " squadrons sustained many casualties. But once again No. 815 Squadron reformed from the survivors.

For the next two years the Squadron operated all over the Mediterranean : in the Egyptian and Libyan Deserts under General Wavell until Benghazi fell for the first time ; then from a secret airfield in the mountains of Albania during the Greek War, attacking ships at anchor in Valona and Durazzo harbours, escaping

to Crete when Greece was overrun. During the battle of Crete, the few who had survived struggled to Egypt to reform and start again.

From the day the " Illustrious " was bombed these " Swordfish " of 815 Squadron were flown over desert, mountain and sea, by the same men, without proper servicing, without " Engine and Airframe Log Books " (which had been lost in the ship), and without any inspections other than a Pilot's " daily " when time and the enemy permitted. Worn out when they returned to Egypt, they were replaced by new machines. Yet throughout these widespread operations only a few were lost through technical breakdown or engine trouble.

No less proud, if less spectacular, was the history of the other twenty-seven " Swordfish " squadrons most of which, from 1942 onwards, were employed in anti-submarine warfare, flying from the tiny decks of escort carriers in the wild seas of the Arctic and Atlantic Oceans.

In 1943, " Swordfish " were the first anti-submarine aircraft to be equipped with rocket projectiles, and one of them was the first aircraft to sink a submarine with this weapon which eventually played so great a part in overcoming the U-boat menace. Only claims of sinkings which were confirmed beyond doubt were allowed, and the " bag " of nineteen credited to the " Swordfish " is a conservative figure. Many more almost certain enemy losses could not be claimed because there was no visual confirmation.

When Japan surrendered in August, 1945, " Swordfish " were still at sea engaged in anti-submarine work in the Indian Ocean.

The final figure of enemy surface vessels sunk, as with the figure for submarines, is small in comparison with the hits by bomb and torpedo which were made, and it represents only those results which were confirmed by visual observation. During the Spring and Summer of 1941 " Swordfish " aircraft were the only night-striking force operating from Malta to make torpedo attacks on enemy convoys trying to reach North Africa from Italy. Attacks were carried out almost every night. A monthly average of 50,000 tons of enemy shipping was sunk by this No. 830 Squadron, in five months. They reached a peak in August when 98,000 tons were torpedoed and sunk. These results were achieved despite heavy enemy bombing attacks which prevented more than seven " Swordfish " being operated at a time.

Attacks against the enemy's surface vessels were not confined to his merchant shipping. Between 26th and 28th March, 1941, " Swordfish " aircraft attacked and slowed down the Italian fleet off Cape Matapan, thus enabling the Eastern Mediterranean Fleet to engage with a subsequent loss to the enemy of three 8-in. gun cruisers and two destroyers, and damage to a battleship and other destroyers. Two " Swordfish " which failed to return were the sole British casualties of this engagement.

In May, 1941, a striking force of fifteen " Swordfish " from the " Ark Royal " in mid-Atlantic, attacked the " Bismarck " in very rough weather when the flight deck of the carrier was rising and falling sixty feet every thirty seconds. The " Swordfish " scored two, possibly three, hits with torpedoes, one of which exploded under the " Bismarck's " stern and crippled her steering. The next morning she was sunk by the Home Fleet.

The attack on the " Scharnhorst," " Gneisenau " and " Prinz Eugen " gained the first Victoria Cross to be awarded to Naval Aviation, and was posthumously

awarded to Lieutenant-Commander (A) E. Esmonde, D.S.O., Royal Navy—an outstanding " Swordfish " pilot.

Owing to thick fog the three enemy vessels were not discovered until fourteen hours after escaping from Brest on 14th February, 1942. Six " Swordfish " attacked the ships North of Calais. The plan to provide fighter cover by eighty-four aircraft miscarried, and only ten made the rendezvous. A few miles out from the Kent coast, the little force of " Swordfish " was intercepted by enemy fighters, and though damaged and on fire pressed home the attack. None of them returned, and sixteen of their eighteen officers and men were lost.

" Misemployment " is the official term for operations by naval aircraft not carried out from aircraft carriers or naval bases. As has been shown, the " Swordfish" lent itself readily to this role. Of the many which could be described, I dip into the realms of Phillips Oppenheim for an outstanding example of the " Stringbag's " versatility.

On hostile territory, many hundreds of miles from the nearest Allied Forces, two " V.I.P's " were " on the run." Only twenty-four hours remained to get them back before certain capture and death would follow. An aircraft with the range to fly there and back could not be used because it would have had to land behind the lines and the landing space would have been insufficient for such an aircraft, particularly as the landing would have had to be made under cover of darkness. The " Swordfish " had only enough petrol to fulfil one stage of the journey, but it had a small enough landing run, and was very suitable for such a night landing on unknown and possibly uneven ground.

Loaded with cans of petrol in the rear cockpit, a " Swordfish " took off. Just before dawn it landed without accident at the correct spot, refuelled from the cans, collected the two " V.I.P's," and took off again. The return flight had to be done in daylight, through enemy fighter patrols. Flying at a height of ten or twenty feet to avoid detection, it got safely home.

This was just one of many occasions when the " Swordfish " proved its versatility and usefulness. Pilots of to-day, too young to have flown the aristocrat of yesterday, are inclined to scoff at the " Swordfish." One often hears the phrase " Oh, but you were a ' Stringbag ' pilot ! " used in a derogatory sense. But to those of us who were, it is the highest compliment we could be paid.

PHYSIOLOGICAL ASPECTS OF HIGH SPEED FLIGHT

By Wing Commander W. K. Stewart, A.F.C., R.A.F.,
and Squadron Leader H. L. Roxburgh, R.A.F.,
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DURING 1939-1945, the maximum speeds which the piston-engined aircraft were capable of attaining in level flight rose from approximately 350 m.p.h. to over 470 m.p.h. With the introduction of the jet propelled fighter the speed record was raised to well over 600 m.p.h., and many new problems were introduced which affected the efficiency or the safety of the pilot. Flight at very great speeds brings about very few intrinsic physiological effects, and even the sensation of speed may only become pronounced when the aircraft approaches closely to other aircraft, or the ground, so that the angle it subtends at a point on the ground changes rapidly. Under these conditions, even at present day speeds, the inaccuracy of the man in controlling the aircraft or its armament may be such that considerable errors of position may be made ; for instance, when attacking a ground target at 500 m.p.h. an error of one-fifth of a second will cause an error of position of about 150 feet. High speed flight, however, may have associated with it many physiological problems which may be classified as follows :—

Intrinsic Factors

Kinetic Heating.—When an aircraft is passing rapidly through the atmosphere there occurs a rise of temperature which may be of an amount intolerable to the human being. This rise is caused by the air being brought to rest relative to the aircraft, both in the boundary layer of the aircraft and in the ventilation of the cabin. Expressed in quantity, the rise in temperature of the air is $0.85 \left(\frac{V}{100}\right)^2$ degrees Centigrade, where V is the true air speed of the aircraft in miles per hour.

It must be emphasised that this rise in temperature of the air occurs whatever type of air intake to the cabin is used, and no methods are available to avoid it. Mechanical refrigeration is the only means of combating it.

From the above formula it is seen that even in temperate climates the air in the cockpit of present-day aircraft may get so hot that the man not only is inefficient but is in danger of heat stroke. The effect may be aggravated by the presence of adventitious heat from engines, etc.

During high speed record tests in 1946, considerable rises in the cockpit temperature were noticed by the pilots who, therefore, had to fly in extremely light clothing. The magnitude of this effect may be realised when, in addition to an ambient temperature of over 20° C., a possible increase in temperature of 30° C. may be added when the aircraft is flying at 600 m.p.h. Fortunately, it requires time to raise the cockpit structure to these conditions and, owing to short endurance of jet propelled aircraft at high speed at low altitudes, this kinetic heating is not a problem of major importance in temperate climates at the present time. It should be realised, however, that the rise of temperature is proportional to the true speed and in the future aircraft flying at very high speeds, even at high altitudes where the ambient temperature may be as low as −40 or −50° C., may be subjected to great rises of cockpit temperature. The physiologist has, therefore, to turn to the engineer for a solution to this problem. In large aircraft the provision of refrigeration and

control of cabin temperature and humidity may be relatively easy; in small military aircraft the problem is much more difficult.

Reaction Time.—Even under optimum experimental conditions, the reaction time of subjects in a test procedure involving a co-ordinated muscular response to a visual or auditory stimulus may be of the order of .15 to .2 seconds. In flight, such simple test procedures are rarely encountered in practice, the reaction of the pilot usually necessitating a controlled response to some situation which may primarily require analysis or assessment. Such a situation may either be well understood by the pilot, who may have been trained to appreciate it with as great speed as possible, or it may be an emergency which has not been encountered before. Practically, therefore, reaction times may vary from 1 second to several seconds. Under these circumstances very great distances may be covered by aircraft flying at very high speeds. In the future, more automatic aids will have to be provided for the pilot for the sighting of targets, for single-seater navigation and other similar factors.

Noise.—There is a considerable difference between the noise spectrum of piston-engined aircraft and jet propelled aircraft. The overall intensity of the noise tends to increase in the latter, and there is also a shift in the frequency at which the highest intensities are found. This increase in frequency from a region of 300 c.p.s. to over 1,800 c.p.s. is of importance in that it is associated with an overall increase in intensity at higher frequencies still.

Noise is of great importance to pilots flying single-seater aircraft because they depend on a high ratio between any signals, through the R/T, to the background intensity, for navigation in bad weather or in cloud flying, or for many other verbal directions, as in interception of enemy aircraft; any rise in the background intensity would necessitate either (a) greater exclusion of this noise, or (b) an increase in intensity of the signal. The latter may not be possible and, therefore, the physiologist may have to devise helmets of greater noise-excluding properties than has been necessary in the past. Noise may be uncomfortable if the intensity is over 130 dbs., but this can be adequately prevented by the wearing of standard R.A.F. helmets. Helmets, however, can only attenuate the noise to a certain extent and fatigue may always be caused by the presence of a high intensity of background noise. The physiological effect of ultra-sonic vibrations of high intensities is as yet imperfectly understood, and considerable research work is in progress to determine whether there is any lowering of efficiency in high intensity fields of ultra-sonic vibration.

Aircraft Factors

Aerodynamic Design.—The design of aircraft has changed appreciably with the introduction of jet propulsion. The aeronautical designer nowadays attempts to produce an aircraft which will be capable of flying at a speed which is a certain proportion of the speed of sound, i.e., its Mach number. Present-day aircraft can fly at Mach numbers of between 0.8 to 0.84, that is, they may attain speeds which are in the neighbourhood of 0.8 of the speed of sound. These aircraft have current features which are directed towards improving the manœuvrability and control at high speeds, and to reducing the drag through the air, which result almost universally in a high tail unit and in a cockpit of small frontal area. Aircraft are already flying with wings which are swept back in an attempt to attain Mach numbers in excess of those mentioned above. The pilot is generally sitting in advance of the wings in order to obtain the best possible vision.

The cockpit of small frontal area has introduced many problems concerning comfort during flight. It is extremely difficult to cater for a range of stature such as is normally found in the pilot population. Large pilots, therefore, tend to be cramped, and it may be impossible to fit large pilots into small modern aircraft with all the emergency or survival equipment which has to be carried during operations at high altitudes over the water or over jungle.

Instrument Flying and Presentation.—It has been mentioned above that navigation may be difficult at high speeds. Considerable research has been effected into the optimum presentation of the instruments which a pilot uses to control the aircraft flying at high speeds. Simplification of various instruments may have resulted from the change to jet propulsion, but that very change has brought in its train a much greater necessity for appreciating at a glance such factors as the attitude of the aircraft, its height, its rate of climb or rate of descent, the temperature of the engines, the Mach number at which it is flying, etc. It is essential for the safety of the pilot, especially when flying at high speeds in cloud, that there should be no tendency to confuse any essential warnings derived from any instrument display.

Together with the introduction of methods for ensuring the survival of the pilot in an emergency, much research has been carried out, not only on the optimum presentation of these instruments to pilots, but also on their position in the aircraft and on the position of the various controls which have to be reached quickly by pilots of all statures, and it is appreciated that the standardization of the contents of cockpits is of great importance in ensuring efficiency and safety of pilots flying a high performance aircraft.

Vision.—The necessity for reducing the drag of the aircraft to the greatest possible degree has, to some extent, reduced the range at which pilots can ascertain small objects. This is due to the very sloping and aerodynamically designed wind-screens now in use. There is, however, a greater all round field of vision due to positioning the pilot in the nose of most aircraft.

Injury.—In many designs which incorporate a single engine the pilot is in front of the engine and there must, therefore, arise a greater hazard when crash landing. The intrinsic injury hazard resulting from obstructions in the cockpit placed too near the pilot have been largely eliminated by the provision of very strong seats and safety harnesses, and by the attempt to create a zone around the pilot free from such obstructions; thus, particular attention has been paid to protection against head injury by preventing the head from being struck against gun-sights, wind-screen frames or other portions of the aircraft structure which have been known to produce injury in the past. Obstructions have been removed as far as possible from the sides of the cockpit near the body, and the instrument panel has been designed to give optimum freedom to the legs.

Ancillary Factors

High Rates of Climb and Descent.—A high rate of ascent may entail great abdominal discomfort due to the inability to pass flatus sufficiently quickly. Severe abdominable pain may be encountered in a rapid climb to over 30,000 feet; in some subjects complete incapacity or fainting may result.

The rate of descent may be limited by aerodynamic reasons, but at altitudes below 15–20,000 feet a high rate of descent is possible, and this may give rise to an increase of blockage of the middle ear. All these factors are, of course, minimised by pressurizing the cabin or cockpit of the aircraft.

Centrifugal Force.—At low or medium altitudes the very fact that an aircraft is travelling at a high speed may introduce large forces or accelerations when any change of direction is made. Even under normal flying conditions an aircraft may have to perform a high rate of turn to carry out single seat navigation without covering too large an area of ground.

The average pilot can withstand centrifugal forces of 5G lasting for 5 seconds without blacking out, although his vision may be somewhat veiled. However, some pilots lose vision completely or black out at turns of 3G lasting for 5 seconds dura-

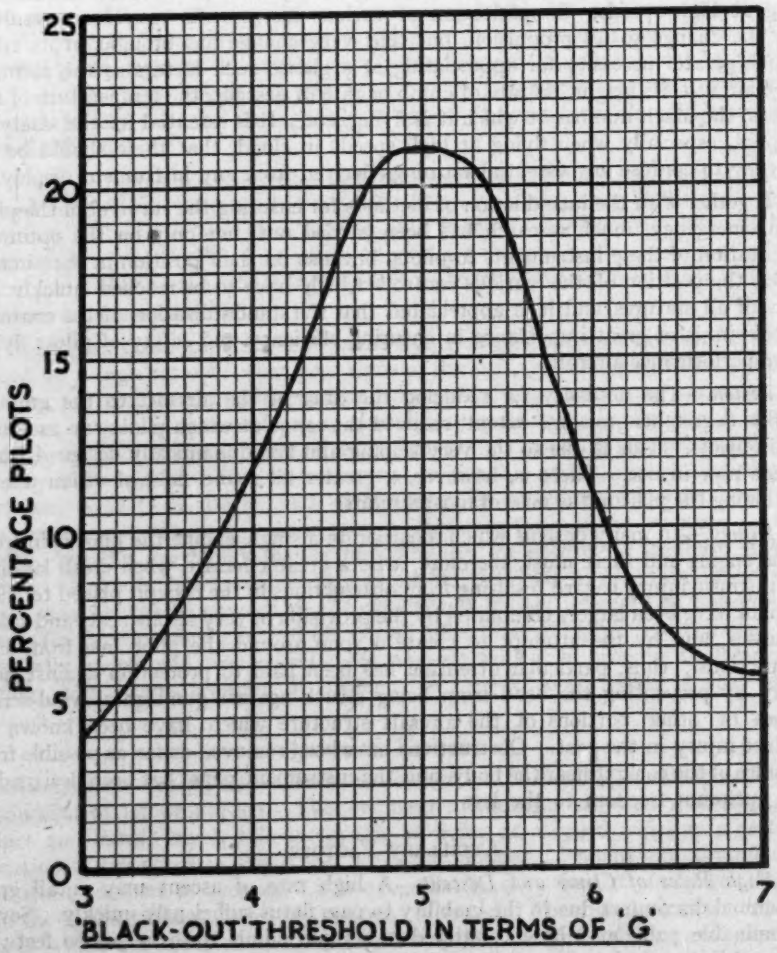

FIG. 1

tion. The normal variation in black-out threshold in a group of 100 pilots is shown in Fig. 1. One would expect, therefore, under normal cruising conditions in very fast future aircraft that pilots may have to be protected, not only for operational reasons, but also to cater for the normal emergencies of everyday flight; at present,

however, this does not seem to be necessary, but for future operational flying, protection by a form of suit will be absolutely necessary. At high altitudes factors relating to the approach of compressibility may obviate the necessity for such protection.

Buffeting.—At low altitudes, an aircraft travelling at 600 m.p.h. in what appears to be relatively still air may encounter upward air movement which results in very brief, sharp accelerations, tending to displace the pilot from his seat. To a certain extent protection is provided by the use of an adequate safety harness. A tall pilot, however, may be so near the canopy of the cockpit that he may strike his head.

During the onset of compressibility, that is when the aircraft is flying at or about its critical Mach number, severe upward accelerations or buffeting may be also encountered. Again, at high altitudes, an aircraft flying at a high speed may encounter upward gusts, and this is of importance to the passengers of future civil aircraft in that they may be suddenly and violently displaced from the seats when safety belts are not fastened.

Linear Accelerations.—With the great reserve of thrust available in jet propulsion, linear accelerations of a magnitude not encountered in piston-engined aircraft may be imposed on the pilot. The value of these accelerations is at present not sufficient to give rise to any mechanical, anatomical or structural difficulty from the physiological standpoint. They are of importance in that they may affect the vestibular mechanisms of pilots and may give rise to disturbance of orientation. When flying in good visibility this may produce no disability whatsoever, but when flying in cloud or at night on instruments the pilot may have difficulty in mastering these subjective impressions and during the acceleration he may imagine that he is climbing when he is in reality flying level. This may result in accidents if the pilot cannot concentrate and believe in his instruments. The instruments have also to be free of any acceleration errors.

Escape

As in tanks and submarines, reasonable facilities have to be provided for crews to escape from aircraft in an emergency. This is important not only for the safety of personnel who may be very highly trained, but also for the stimulus to morale which is afforded. No matter how highly motivated the air crew may be, morale will suffer if there is absolutely no means of escape provided for certain conditions. During 1939 to 1945, a very considerable amount of experience was gained in the factors affecting escape and the stories of survivals were especially valuable. In single-seater aircraft it was evident that there was a relationship between expectation of survival and the air speed at which the emergency occurred. Above a limiting air speed of around 350 m.p.h., the escape stories frequently appeared to be miraculous, and survival seemed to depend upon some fortunate circumstance, such as the pilot being thrown through the canopy of his aircraft, losing consciousness and finding himself floating freely down with an open parachute. Other hazards, such as violent impact with a portion of the aircraft, were recorded.

The chief circumstances leading to emergencies such as these could be briefly summarized as loss of control, structural failure, operational damage and fire. Factors which tended to impede escape were anoxia, inadequate size of exits, the weight of the parachute and dinghy and being compressed into the cockpit by centrifugal forces when descending out of control. The important factor is the rapidity with which these events occur, and it was realised that an increase in survival rate could only be expected if steps could be taken before the emergency was fully developed.

With the introduction of jet propulsion all these factors are present, but the general features of aerodynamic design lead to increased difficulty and to an increased expectation of injury from impact with the airframe. The air speed at which emergencies occur has in general been markedly raised. High air speed with its contingent high air pressure, tends to force the pilot down into his cockpit and very greatly to impede any possibility of exit. The only means of survival which have been current in modern aircraft are jettisonable canopies, personal parachutes and dinghies.

Aircrew thus have adopted one of three methods of escape :—

Firstly, at low speeds they may step from the cockpit on to the wing whilst maintaining the aircraft in the level attitude. This is impossible in standard jet propelled aircraft since the wing is aft of the cockpit.

Secondly, they may turn the aircraft on to its back, undo safety straps and fall out. In many modern aircraft, certain injury would ensue from impact with the tail unit.

Thirdly, they may crouch on the seat and kick the stick forward thus " bunting " themselves out of the cockpit. This is extremely difficult to do in small cockpits, impossible at high speeds and there would also be little expectation of clearing the tail unit in jet propelled fighters.

It was, therefore, essential that some method of assisting the pilots to escape from the aircraft be developed. This might either entail a general reduction in speed or a positive separation from the aircraft. The latter has been adopted and since the end of 1944, a very great deal of research has been carried out in this country towards developing upwards ejection of the pilot from the cockpits of jet propelled aircraft.

Seat Ejection.—In seat ejection two main physiological problems are encountered —the high acceleration necessary to propel the pilot from the cockpit and the effects of the air blast at very high speeds. The initial problem investigated was the liability to injury of human subjects when exposed to great forces applied in an upward direction to the spine. Fig. 2 illustrates the factors concerned. Research such as this has to be carried out by designers and engineers in addition to physiologists and by research ministries, because of the large expenditure concerned. Various tests rigs have been built by the Martin Baker Aircraft Company to investigate this particular problem. They have varied from 25 feet to 115 feet in height and are inclined at 25° from the vertical.

Certain features of the aircraft cockpit determine the physical limits of the investigation. In general, the maximum distance through which the subject could be accelerated was of the order of 42 inches. During this distance the pilot had to be accelerated from rest to a velocity of 60 feet per second ; this figure had been found by extensive flight trials to be necessary for the pilot and seat to clear the tail of the Meteor at high speed. In actual practice, a clearance of from 9 to 10 feet is obtained at 500 m.p.h.

Many interesting facts in relation to the structural stress of the body have been elicited during this research, partly by subjective effects and partly by recording electronically the transmission of accelerations to various parts of the body from a rigid structure such as an ejection seat. The maximum value of the acceleration is of great importance, e.g., whereas 25G may produce severe discomfort or pain in some subjects, 20G merely has slight effects. 20G may be accepted as a maximum value for tolerability.

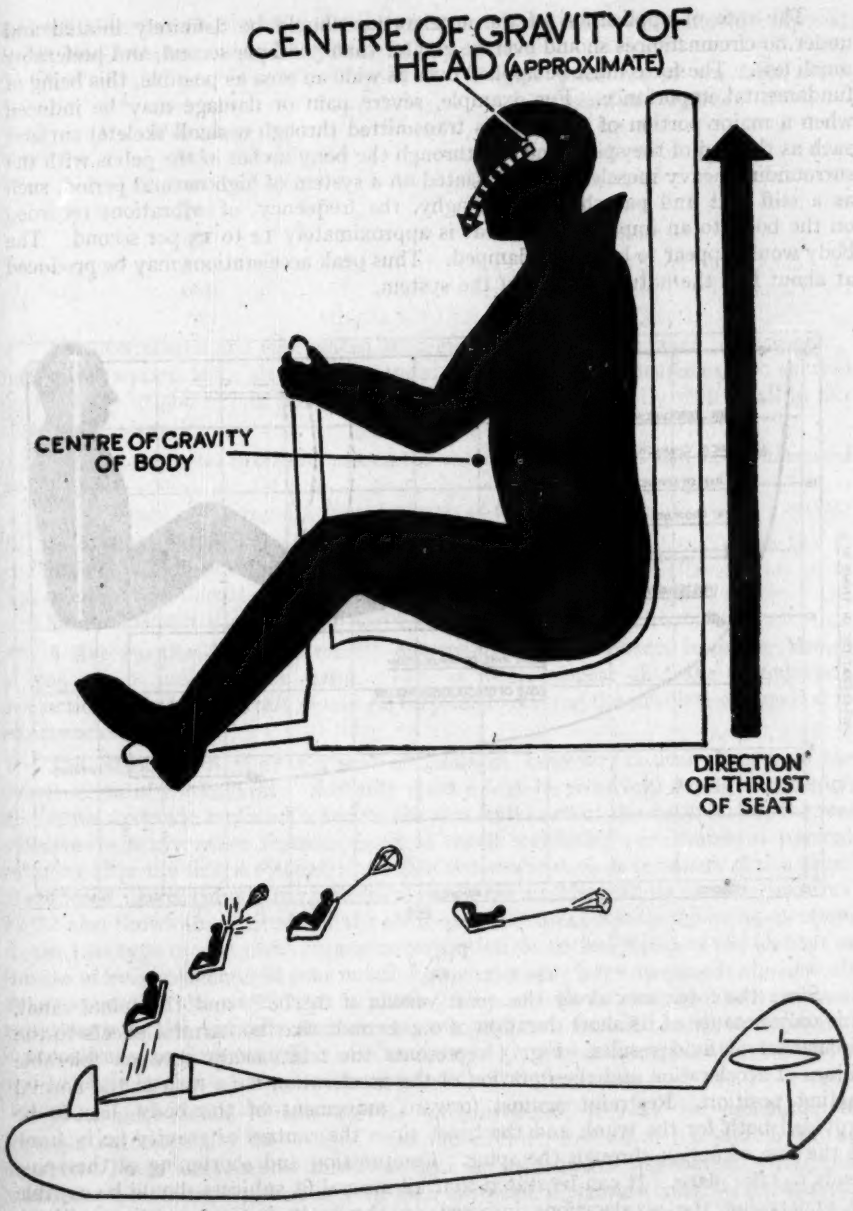
CENTRE OF GRAVITY OF HEAD (APPROXIMATE)
CENTRE OF GRAVITY OF BODY
DIRECTION OF THRUST OF SEAT
EJECTION OF PILOT FROM AIRCRAFT AT HIGH SPEED

FIG. 2

The rate of application of the acceleration should be definitely limited and under no circumstances should ever be greater than 300G per second, and preferably much less. The force must be applied over as wide an area as possible, this being of fundamental importance. For example, severe pain or damage may be induced when a major portion of the force is transmitted through a small skeletal surface, such as the end of the spine, and not through the bony arches of the pelvis with the surrounding heavy muscles. When seated on a system of high natural period, such as a stiff seat and parachute and dinghy, the frequency of vibrations recorded on the body to an impact on the seat is approximately 12 to 13 per second. The body would appear to be highly damped. Thus peak accelerations may be produced at about half the natural period of the system.

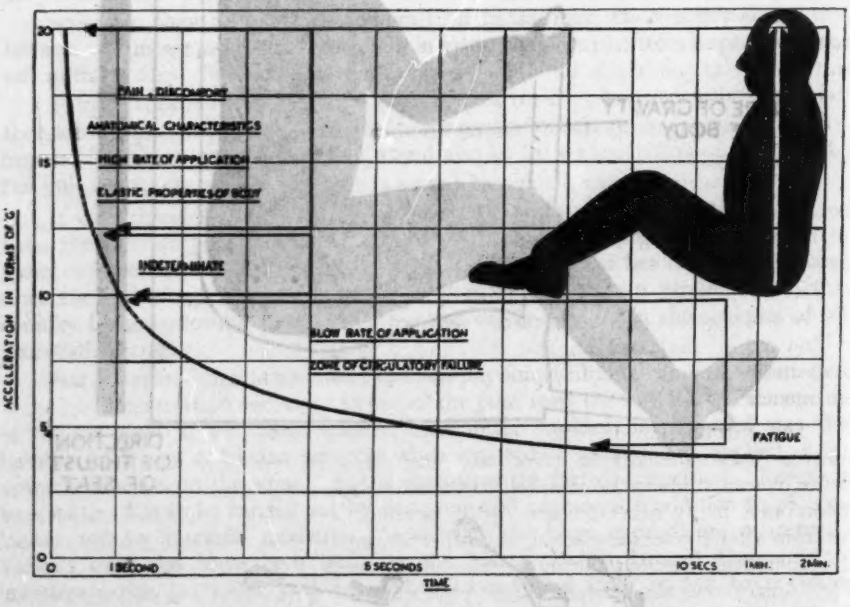

FIG. 3

Since the force acts along the great vessels of the body and the spinal canal, it is only because of its short duration of 0.2 seconds that no harmful effects to the circulation of fluid results. Fig. 3 represents the relationship between tolerable values of acceleration and the duration of the acceleration for a man in the normal seating position. Restraint against forward movement of the body has to be provided both for the trunk and the head, since the centres of gravity lie in front of the line of action through the spine. Compression and shortening of the spine tends to take place. It can be stated that all normal fit subjects should be capable of undergoing the accelerations imposed on the body in seat ejection without disability.

The problem of the physiological effects of the air blast has largely been settled by the live ejections carried out by the Martin Baker Aircraft Company. This has only been achieved by great engineering ingenuity and by the courage of

the volunteer parachutist, Mr. B. Lynch. If a human subject be suddenly exposed to air blast, the force would be of the following order :—

Miles/hour	*Impact pressures at sea level, standard atmosphere lb./sq. ft.*
100	25·6
200	102·3
300	230·2
400	409·2
500	639·5
600	920·8
700	1253·3

The frontal area of a man seated in an ejection seat may be taken to be approximately 5-6 square feet. It is thus obvious that very high pressures can be exerted on the body at 500 m.p.h. but these pressures decrease markedly with a fall in airspeed or at altitude.

The physiological problems associated with these pressures can be summarized as follows :—

1. Damage or tearing of exposed tissues of face.
2. Damage to lungs or chest.
3. Injury to limbs.
4. Injury to head.
5. Displacement of protective equipment.

A live ejection has been carried out without any ill effects from the Meteor at 505 m.p.h. indicated air speed. Thus it would appear that the introduction of ejection seats into aircraft would go very far to solving the problem of survival in emergencies.

The introduction of such a seat necessitates, however, radical changes in the construction of the cockpit. Not only must a seat be relatively strong and heavy, and move up guide racks attached to the rear bulkhead of the cockpit, but it must incorporate many other features, such as small stabilising parachutes to prevent rotation after the seat is ejected, and other automatic devices to ensure that a pilot, if rendered unconscious during ejection either by air blast or by anoxia, survives. Fig. 2 also shows the attitude of the pilot and seat immediately following ejection. Again, this type of seat must impose no restriction on normal flying of the aircraft or the use of its armament. It does entail, however, a very large opening in the aircraft to accommodate the largest size of pilots. All connections from the pilot's personal equipment to the aircraft, such as oxygen and anti-G suits must be separated automatically on ejection. It is also necessary to ensure a 100 per cent. jettisonable ability of the cockpit canopy. Development is still proceeding.

Jettisonable Cabin.—Under certain circumstances, it may be preferable to separate automatically the cockpit from the aircraft, instead of the pilot from the aircraft. There are certain disadvantages or advantages associated with both schemes. For instance, when at very high altitudes, if pressure could be maintained within the cockpit during descent, unconsciousness, or even death, from the physical effects of very low atmospheric pressures might be avoided. Again, there is presumably a limit to the tolerability towards air blast. At supersonic air speeds it may thus be preferable to retain the pilot within his cockpit to obviate the effects of the blast. Future aircraft may, therefore, incorporate cockpits which can be

automatically or manually separated from the rest of the aircraft, but development is certain to be extremely laborious.

Future Trends

The question of whether the sonic barrier will be passed by piloted aircraft appears to depend largely on aerodynamic research. The German V.2 missile attained speeds approximating 3,600 m.p.h. Thought along the lines of future aircraft may be crystallizing on the shape, thickness of wings, their size and relation to the structure of the fuselage. Future aircraft may be more akin to giant rockets than to aircraft such as we have known, although a transition stage of the flying wing type of aircraft may be necessary.

Military aircraft able to attain high speeds may impose problems of acceleration distinct from those encountered in the past. These problems are likely to be due to successive combinations of acceleration rather than to one predominant type of acceleration; for instance, the aircraft may have rocket-assisted take-offs, or their own thrust may be sufficient to impose accelerations large enough to immobilize the pilot; these accelerations would be the linear type and would be well tolerated by a pilot in the normal seated position, they may last for a considerable time and would perhaps be succeeded by a radial or centrifugal type of acceleration which would not be well tolerated by a pilot in the seated position. Thus, an average pilot exposed to 3G over 3-4 minutes might complain of intense fatigue, as well as of other circulatory or structural disorders. If the pilot is placed in the prone position he would tolerate radial accelerations remarkably well, but would be incapacitated by large linear accelerations due to circulatory insufficiency. A pilot in the prone position has also a very low tolerance to decelerations during landing.

Very little is known of what may occur in the transonic region. Presumably excessive buffeting may be present before the aircraft is flying faster than the speed of sound. It may, therefore, be necessary to provide pilots with some form of anti-injury device. When an aircraft is flying at a Mach number greater than one, a sudden failure of propulsion may give rise to large decelerations, the magnitude of which would depend upon the aerodynamic characteristics of the aircraft. It has to be considered, therefore, that a pilot might be subjected to decelerations during flight of a similar degree to those which he may be subjected to at the present time during a crash landing. The development of strong and effective safety harnesses and the removal of all obstructions which might cause injury would be be of redoubled importance, as any small degree of injury might cause loss of control.

At very high speeds vision may be affected, as refraction may take place at the wave of compressibility which precedes the aircraft in flight. This, if present, may preclude the use of visual or sighting devices which require the normal degree of accuracy.

In the past, vibration of low frequencies has not been a major factor causing inefficiency of aircrews. Wherever it has arisen it has been eliminated by aeronautical research and engineering devices. It is probable that vibration of different degrees may be present in transonic flight from those which have been apparent in the past and, although the present day jet propelled aircraft appear to be little different from piston-engined aircraft, a careful watch will have to be kept on this problem since it is known that vibration may lead to discomfort and fatigue if the frequency and amplitude lies within certain limits.

Conclusion

The physiological research during 1939-45 was largely concerned with utilizing man's powers of adaptation to the stresses imposed by flight. In general, it was found that individuals varied remarkably in their tolerability of any biological stress encountered, but that in every stress a limit was reached beyond which failure of one or other bodily processes or consciousness occurred.

It is apparent that problems of flying at high speeds, as in those encountered at high altitudes, are reaching a stage at which man may be overstressed and cannot overcome a particular condition even with the aid of physiological devices designed to assist him. There has thus to be a much closer liaison between physiologists and the designers of aircraft, if efficiency and survival of flying personnel are considered important. It is entirely possible that in the future physiological requirements may play a large part in deciding operational requirements.

UNIFORMS OF THE ARMY IN PICTURES AND RECORDS

By The Reverend Percy Sumner, F.S.A., F.R.Hist.S.

On Wednesday, 26th November, 1947

General Sir Charles Loyd, K.C.B., K.C.V.O., D.S.O., M.C., in the Chair

The Chairman: It is hoped that this meeting this afternoon will serve two purposes. First of all, it will give us the opportunity of hearing a lecture on the Uniforms of the Army from the Reverend Percy Sumner, and secondly it will afford an opportunity for the regimental representatives on the R.U.S.I. Uniforms Committee to assemble together to take part in a discussion after the lecture and to hear how the activities of the Committee are progressing.

Mr. Sumner does not, I think, need much introduction to you, at any rate to those of you who are interested in this subject. He is recognized, and has been for many years, as one of the greatest living authorities on uniforms, and his contributions to the Army Historical Research Society Journal are very well known. I believe, too, that he has recently undertaken the classification of the King's military pictures at Windsor.

I understand that he is going to deal with the subject of uniforms from 1660, that is, the time of the Restoration, up to the year 1914. I am sure you will agree with me that that is the most colourful period.

In order to add interest and provide a setting for the lecture, the Secretary of the R.U.S.I. has put round this room a few of the very large collection of uniforms and head-dresses which we have here, and also some of our pictures.

LECTURE

A WRITER in *The Times* in 1934 said the history of British military uniforms is one of the most difficult of all subjects and one of the subjects most often bungled by those who handle it. It may clear the ground if I just give an idea of the extent of my researches. For 57 years I have studied the uniforms and equipment of the Regular Army in every department—coats, facings, laces (worsted and gold or silver), skirt ornaments, head-dresses, belt plates, badges, shako plates, swords, firearms, horse trappings, standards and colours, hairdressing, etc., but as regards buttons not exhaustively, nor have I attempted to deal properly with the Militia, Yeomanry or Volunteers, the Indian Army and Colonial Forces. Let me also explain certain abbreviations that may be used. "Army Historical" means the Journal of the Society for Army Historical Research. "Record Office" means the Public Record Office in Chancery Lane. "Windsor" means the Royal Library, Windsor Castle. "The Cumberland Papers" mean the 32,000 documents left by the Duke of Cumberland on his death in 1765. They are preserved in the Round Tower at Windsor in 82 boxes—I went through the whole of those documents and extracted a good deal of interesting information. If I mention "Lawson," I mean Mr. C. C. P. Lawson's *History of the Uniforms of the British Army* of which two volumes have been published up to date, taking them up to the year 1760.

I propose in the limited time at our disposal to run through the most important sources of information so far available and afterwards I understand there will be an opportunity given for any questions. Most of the illustrations that I mention up to 1760 will be found reproduced as line drawings in Lawson's two volumes,

and most of the letterpress for the whole period 1660 to 1914 has been printed in the Army Historical.

With this preface we can now begin. The matter may be conveniently divided into four sections.

Section I—1660 to 1700

Colonel Walton's sketches, 1660–1700, at the R.U.S.I.—First of all I should like to mention Colonel Walton's book covering the period, published in 1890, and his albums of sketches in water colours, in the library of this Institution. They were, of course, excellent work for the time they were done, but since 1890 we have learnt a good deal more. They are very good as far as they go.

1660. *Departure of Charles II from Holland (Foot Guards).*—In 1660 we have the painting at Hampton Court showing the departure of Charles II from Holland. It introduces the 1st Foot Guards, officer, drummer and some privates.

1661. *Coronation of Charles II (Troop of Horse Guards).*—There is the Coronation of Charles II by J. Ogilby, with Hollar's engravings, showing particularly the Duke of York's Troop of Horse Guards.

1669. *Hollar's sketches at Tangier.*—Water colours done in Tangier, in the Print Room, British Museum. They show infantry officers in uniforms adapted for hot countries, light grey coats and fluffy wigs. The other ranks have their usual red coats.

1670. *General Egerton (1st Troop, Horse Guards).*—About 1670 we have a mounted portrait of Major-General Egerton whose whole service was in the 1st Troop of Horse Guards. This is painted by Wyck. It is a very beautiful example indeed.

1679. *Bothwell Brigg paintings (Dragoons).*—There are some large photographs at Edinburgh Castle, from contemporary paintings, with some dragoons and officers, which are done very well. I do not know where the originals are to be found.

1682. *Murder of Thomas Thynne (Westminster Abbey).*—In 1682, Thomas Thynne was murdered at the instance of Count Koenigsmark. On his tomb in Westminster Abbey is a sculpture in which three mounted men are shown very well indeed.

1682–85. *Artillery in Scotland.*—In the Edinburgh Register Office we have details of the dress and clothing of the Artillery, 1682–85.

1683. *Tangier paintings by Stoop.*—At the Maritime Museum at Greenwich there are paintings of Tangier by Stoop, showing among other things a parade of the garrison and also an officer, sergeant and private of Infantry.

1684. *Nathan Brooks' List.*—In 1684 there is the well-known Nathan Brooks "Complete List Military."

1685. *James II Coronation (Household Troops).*—There is a full description of the Household Troops in which the description of the Grenadier cap is rather puzzling but this has been made clear to us in the portrait of Captain Hawley, of the Grenadier Company, 1st Guards, at Charborough Park, Dorset, It was discovered by Colonel C. Field some time ago. "Scots Guards," a print of the opening of the Scottish Parliament, shows an officer, sergeant and privates.

1686. *Orders for the Blues.*—We have the Earl of Oxford's orders for the officers' coats of the Blues, printed in Arthur's "Story of the Household Cavalry."

1688. *William III's entry into London.*—William III's entry into London, with engravings by R. de Hooge showing the Cavalry privates.

1684. *Militia Regiments.*—There is a very good description of the Militia regiments in Dineley's "Progress of the Duke of Beaufort." About this time we have a specification for the coats of the Scots Greys, 1687, in which there are to be ten dozen buttons on the coat.

There were a great many buttons on the coats at that time and up to the end of the Century. Soon after 1700 the number of buttons decreased very much. 1689—we have a fine mounted portrait of William, Lord Cavendish, 10th Horse (7th Dragoon Guards) in possession of the regiment.

1689–1702. *Great Wardrobe, issues of uniforms, etc.*—The Great Wardrobe Accounts in the Round Tower at Windsor describe very fully the issue of uniforms for trumpeters and drummers of the Household Troops and certain other favoured regiments.

1691. *William III in Holland.* These are the prints by R. de Hooge.

1694–1708. *Clothing Contracts, 29th Foot.*—Of 1694-5 and 1702-8 we have these very interesting clothing contracts of the 29th Foot in the Regimental Museum at Worcester. In the Irish Treasury papers of 1691 and 1692, there are schedules of clothing for some ten infantry regiments from which we see that the officers of some regiments had blue coats and some crimson; and subaltern officers had silver lace, while captains and field officers had gold. I take 1694 as the date when the flaps over the pockets began to come in. Before that the pockets were usually pretty low down, near the hem of the coat, just a slit with no covering, or else they were made upright in the skirts.

1694–97. *Clothing for Lindsey's Regiment.*—We have a very full schedule of clothing for Lindsey's regiment. This again, is in the Edinburgh Register Office. The King at last seemed to make up his mind that he must have some better regulation about the officers' uniforms, so an order was issued in 1697 that the officers were to agree upon a pattern approved by the Colonel for their coats and to buy them where they liked.

1698–1706. *Scots Life Guards.* From 1698 to 1706 there are very full clothing specifications for the Scots Troop of Life Guards at the Edinburgh Register Office.

1699. *Royal Dragoons Clothing Contract.*—We have the clothing contract of 1699 for the Royal Dragoons in the British Museum Newspaper Room.

Section II—1700 to 1768

1702–1746. *Great Wardrobe. Issue of Uniforms and Colours.*—For the period 1702 to 1746, we have the continuation of the Great Wardrobe Accounts at Windsor. These have not yet been published, but I have extracted them and have got the material. They can be published at any time when necessary.

Circa 1704. *Blenheim Palace Tapestries.*—About 1704 or a year or two later the tapestries at Blenheim Palace were ordered. They were begun actually in 1706, so we can take those tapestries as being true representations of costume of the period, and they include an excellent figure of a grenadier of the 1st Foot Guards and a sergeant, private and grenadier of the Royal Scots, and any number of General Officers. I have never seen Laguerre's paintings at Marlborough House, but Mr. Lawson has seen them and given certain illustrations from these paintings in his book. They are a little later in date than the Blenheim tapestries.

1707. *Clothing of Scots Greys and 8th Dragoons.*—Among the regimental papers of the Scots Greys is a list of clothing. There is no date, but it must be about 1706. Then we have, in the papers at the Record Office, a schedule of clothing and equipment of the 8th Dragoons, 1707. This is very full indeed.

Circa 1712. *Amsterdam Town Guard—61 figures.*—Dated about 1712, there is a very interesting collection of water colours beautifully executed in the British Museum manuscript department. It puzzled us for some time to decide what particular troops they represented, but now they have been identified by M. Hoynck van Papendrecht, the Dutch artist, as the Amsterdam Town Guard. They are excellent figures and most beautifully done.

1715. *Clothing of Scots Greys and 4th Dragoons.*—1715 is the date of a specification of clothing of the Scots Greys, preserved in the Edinburgh Register Office, and in the same year for the 4th Dragoons there is a report of a review in a contemporary letter.

1720. *3rd Guards grenadier—wooden figure.*—About 1720 we have the dummy of a 3rd Guards grenadier at Canons Ashby. 1725, I think, is the date when lapels on the coats began to appear. They were introduced gradually, and it was not until 1749 that the Infantry were all ordered to have lapels.

1725. *Buffs grenadier.*—There is an excellent figure of a grenadier of the Buffs of 1725 as a supporter of the arms of Sir Charles Wills, the Colonel of the Regiment, on his Bath plate in Westminster Abbey.

1727. *2nd Foot grenadiers—wooden figures.*—These figures of two grenadiers are in the Museum at Guildford. Unfortunately they have been repainted of late years and the sea-green facings are now dark blue: that is a pity. Hogarth's half pike and halbert exercises of the Hon. Artillery Company are about 1725.

1735. *Grenade Exercise, 1st Foot Guards.*—This is a book illustrating the grenadiers' exercise of the 1st Guards. At Windsor Castle there are two copies of the work—one contains what must be Bernard Lens' original monochrome drawings and the other is a collection of coloured prints from the drawings.

1740. *Infantry Officers (Drill Book).*—There are excellent figures of infantry officers performing the salute with the half pike in this drill book. I do not remember the name or title of the volume, but I found it in the Brecon museum.

1742. *Representation of Cloathing.*—Of the well-known "Representation of Cloathing" of 1742, there are copies at the British Museum and the War Office and another at Woolwich. The Woolwich copy contains in addition an officer and gunner of the Royal Artillery. I would like to give a warning about the reproduction of this book which was made some years ago. Twenty-five copies were printed, but it is a very poor reproduction of the original and I would not make any use of it. I would go to the real copies at the British Museum or the War Office. There are also copies of this book containing the Cavalry regiments only, a beautifully fresh copy in the Royal Library at Windsor and another in the Prince Consort's Library at Aldershot. The latter contains one or two original water colours and I think there is another copy of the complete work somewhere in the United States.

1742–46. *Uniform of the Artillery.*—For these years we have notes of the Artillery clothing in the Record Office. In 1743, we have that excellent series of full-length portraits of what are called the "Black Watch Mutineers."

1746. *4th Foot at Culloden.*—In 1746, there is the painting by Morier of the 4th Foot at Culloden showing an officer, sergeant, grenadier and drummer. Then we have of the same date the Parliamentary report on the clothing of the Army.

1747. *Clothing Regulations.*—I came across the Duke of Cumberland's own copy of these Clothing Regulations among the papers at Windsor and found it has two endorsements. There is no heading to this document at all. One endorsement is in pencil to this effect: "Colonel R. Napier's draft regulations re Colours, etc., of Marching Regiments, 1747." The endorsement in ink runs like this: "Some regulations proposed for fixing the colours, drummers' clothing, grenadiers' caps, etc., of the Marching Regiments, December, 1747. R. Napier." This is in Box 30, Document 374.

1748. *Officer, Royal Dragoons (Hawley),*—There is an excellent mounted portrait of Henry Hawley as Colonel of the Royal Dragoons by Morier, dated about 1748, in the possession of General Sir. E. Makins. Of the same year, 1748, I came across a letter from the Duke of Montague to the Duke of Cumberland. The Duke of Montague was at that time Master of the Ordnance and he says "Our regiment of artillery was formed on the model of the Royal Regiment of Artillery in France." That would be in 1716, when the Royal Regiment of Artillery was formed in the British Army.

1751. *Clothing Warrant.*—Of 1751 we have the Clothing Warrant and a series of paintings by Morier at Windsor Castle, showing a private of every cavalry and infantry regiment. In 1900 I was allowed to make very careful tracings in ink of every one of those paintings. I spent three weeks there and worked from nine o'clock in the morning until eight o'clock in the evening and copied them all. Later I made water colour facsimiles of these paintings which are now deposited in the War Office library. In the autobiography of Angelo, the fencing master, he remarks on Morier's paintings. He says his paintings are to be found in numerous country houses throughout the land. That goes to show that there must be more of these paintings than we know of.

1755. *Standing Orders for the Dragoons.*—These are very interesting, showing among other things that Dragoon officers when about to attack were to change their sashes from over the shoulder to round the waist. Then, in 1756, a new exercise was issued for the Foot to replace an exercise which had gone on for 100 years without change.

1756. *11th Dragoons, series at Newbattle Abbey.*—About 1756, we have five very interesting paintings which used to be at Newbattle Abbey. I do not know where they are now. They show men of the 11th Dragoons—a drummer, a private of the Light Troop, a dragoon, a sergeant and a farrier.

1760. *Light Dragoons, by Morier.*—In 1760, Morier painted pictures of the Light Dragoon regiments—15th, 16th, 17th and 21st and drummer of the 15th. These are at Windsor Castle. I copied these too, and they are in the War Office library. There are also paintings by Morier of the 15th Light Dragoons at Wilton. They repeat in a way what Morier did for the King at Windsor, but introduce something quite new and that is a hornist—a man with a sort of hunting horn and given a special uniform, too, not the same as the drummer.

1764 *to* 1782. *Clothing Bills, Royal Dragoons.*—All the clothing bills of the Royal Dragoons from 1764 to 1782 are in the possession of the Earl of Pembroke. They were lent to me and I published them in the Army Historical.

1768. *Clothing Warrant.*—In 1768 we have the Clothing Warrant and for the same period we have the actual patterns in the Royal Library of the facings and worsted lace, half an inch wide, for the seventy Line regiments, so now we can be quite sure what these shades of colour really were. For instance, the gosling green of the

5th Foot was a kind of pea green. Besides that, there are 22 patterns of worsted laces which are 1 in. wide, twice the width of the other laces, and that width agrees with the drummers' laces of Militia about 1820, in the pattern book at the Record Office, so those laces must be drummers' laces. It remains to allot them to particular regiments. They are attached to patterns of facing, and a good many of them are attached to a dark blue facing.

Section III—1771 to 1815

In 1771, the Light Companies of infantry regiments were formed and we find from the Inspection Reports that they began using horns for their signals.

1771. *Paintings of the 25th Foot in Minorca.*—There are six large paintings, quite long paintings, at Haile Hall in Cumberland in the possession of Sir John Ponsonby, showing the 25th Foot and one or two other regiments in Minorca. They are really most interesting. There are all kinds of ranks shown of the 25th. Then we have the very beautiful water colours in the Royal Library of Light Company privates of the 11th, 24th and 25th Foot.

1784, *etc. Kay's Edinburgh Portraits.*—Issued in 1784, and succeeding years, there is the collection of Edinburgh portraits by Kay. They show many infantry officers' uniforms.

1787. *7th Fusilier series, 13 figures.*—These are figures in water colour of the Royal Fusiliers of about 1787. They are in the depot at Hounslow but, unfortunately, at the present moment in store. Of the same time, 1787, there used to be in the *Zeughaus* at Berlin a number of actual British uniforms, including those of the Royal Dragoons, 16th Light Dragoons, Coldstream Guards and a Highlander. Photographs of all these were taken at the instance of Mr. Lawson before the War, so that even if those uniforms have disappeared we have the illustrations.

1792–3. *E. Dayes' set of Infantry Uniforms.*—In 1792 and 1793, we have the well-known set of infantry coloured plates by E. Dayes—six figures for each of the three regiments of Guards, officer and private of 1st to 9th and 15th Foot and a private of the 29th. The latter is not a print but a water colour, formerly in the possession of Mr. S. M. Milne.

1793. *Bucks Militia set.*—There is in the British Museum Manuscript Room a set of very interesting water colours, eleven in number, done by an officer of the Bucks Militia in 1793. Then we have at Windsor the painting of the 10th Light Dragoons—two sergeants, a private and trumpeter—by Stubbs. Sometimes these sergeants have been described as corporals from the two chevrons shown on their arms, but that is before there were regulations about chevrons. Of the years 1794 and 1795, in the Royal Library at Windsor, we have the miniatures of 17 officers of the regiment, showing three varieties in the uniform.

1795. *Standing Orders, 2nd Dragoon Guards.*—These are very complete.

1796. *Sword Exercise, 10th Light Dragoons and 16th Light Dragoons.*—About this time, Major-General Le Marchant originated a sword exercise for the Cavalry. He had been an officer of the 2nd Dragoon Guards and had noticed how in the engagements the British troopers often wounded themselves or their horses by the clumsy manipulation of their weapons; so he set to work to compile a sword exercise which was adopted officially and printed in a handbook in the year 1796. It contains excellent drawings from life by his brother-in-law, Lieutenant P. Carey, of the 16th Light Dragoons

1796–1808. *Welch and Stalker's Pattern Book.*—This Pattern Book is in the South Kensington Art Library. It contains coloured drawings of coats of Cavalry, Infantry, Yeomanry, Volunteers, etc.—quite a selection of them—and various other things. There are about 110 officers' coats illustrated with full descriptions and dates.

1799–1800. *British Military Library plates.*—These are the coloured plates of the British Military Library.

1800. *6th Foot series—14 figures.*—Of the year 1800, there is a very interesting album of 14 water colours evidently done by an officer of the regiment at the time, showing uniforms of various ranks of the 6th Foot. It was bought at a sale by Captain Haswell Miller of Edinburgh, and I think is still in his possession. It is most valuable.

1801. *61st Foot in Egypt.*—This couple of water colours, with very small figures, painted by a private of the 61st Foot in Egypt, are in the Lancashire Fusiliers' Museum at Bury. They are very interesting because they show the privates mostly with white trousers, some of them striped with blue, and drummers in yellowish coats.

1802. *Clothing of Infantry.*—In 1802, a long report was made on the clothing of the Infantry. It is in the War Office Library.

1803. *De Bosset's Scheme.*—This is De Bosset's scheme of uniforms.

1805. *Group of Light Dragoon officers by Dighton.*—Of 1805, there is in the Royal Library a painting of Light Dragoon officers in two sections; practically all the regiments are represented there, and a great many of them wear the mioliton cap with a long wing. Then there is Hawkes' Pattern Book, the well-known tailors of Savile Row, with many officers' uniforms of the Peninsular period. From 1809 to about 1824, there is Buckmaster's Pattern Book in the library of this Institution.

1807. *Sir George Naylor's Books.*—At the Heralds' College in Queen Victoria Street, there are the books that belonged to the Garter King of Arms, Sir George Naylor, when appointed Inspector of Regimental Colours in 1806, the first time that such an appointment had been made. He at once sent round a circular to the Commanding Officer of each regiment with diagrams in which he had drawn what he thought the Colours of the regiment ought to be and then, if they differed in any way, the Commanding Officer was to put an illustration in the blank provided. This collection is most interesting. About twelve of these Infantry Colours have been reproduced, but no one has copied any of the Cavalry Standards so far.

1808. *Dighton's groups of Cavalry officers.*—These are in the Royal Library. They are very large figures indeed and most authentic. About 1807, we have the Long papers, which are in the library of this Institution. They contain, among other things, schedules of clothing for the 15th Hussars and the 16th Light Dragoons, and through these we can now get a good idea of what a trumpeter's coat must have been in the 16th Light Dragoons. Some interesting extracts from these papers have been published by Mr. McGuffie in the Army Historical. Then we have the series of R. Dighton's caricatures. They are certainly caricatures as regards the faces, etc., but not as to the uniforms, and there are about forty-four of them showing Army officers.

1812. *Military Costume of Europe.*—These are coloured plates of the military costume of Europe, published by Goddard.

1812–15. *Hamilton Smith's costumes*—60 *plates.*—The copy of this book, in the Royal Library, has the plates heightened with gold and silver.

SECTION IV—1816 TO 1914

1816. *Sauerweid's drawings and French prints.*—Of 1816 we have a number of drawings by the very accomplished Russian artist Sauerweid in the Royal Library. A trumpeter of the Life Guards is shown in his red cloak and wonderful cocked hat with gold lace and red plumage round it. There is also a lot of French prints done in Paris, and many of them have to do with the Highland regiments.

1818. *11th Light Dragoons—Sword Exercise.*—These are forty-two sepia drawings done by D. Dighton showing the sword exercise by a private of the 11th Light Dragoons. They are beautiful drawings, like photographs, and a good size, about one foot high. They have never been published.

1819. *Marcuard's Scheme of officers' uniforms.*—I know there is a copy at Edinburgh Castle.

1820. *W. Heath's series of Cavalry officers* (16).—About the same time that these plates were made, there is the Pattern Book for Militia Uniforms at the Record Office. This contains patterns of facings and lace for sergeants, drummers and privates—a very valuable lot of information.

1822. *Dress Regulations.*—These were the first of the Dress Regulations to cover the whole Army.

1824. *9th Lancers, Lance Exercise.*—These are twenty-five sepia drawings by Denis Dighton in the Royal Library; they were also issued as a book of coloured prints in 1825.

1825. *Cavalry drawings by D. Dighton.*—A number of these drawings are at Windsor, very large and beautifully done in the details.

1826. *Dress Regulations.*—These Regulations show slight differences from 1822.

1828–30. *E. Hull's series of coloured plates.*—There are sixty-eight plates in this series. There is a copy in the Library here.

1831. *Spooner's large series.*—Six very large prints. Dress Regulations were issued also in that year.

1832–3. *Drahonet's paintings of officers and men.*—These years produced the beautiful oil paintings by the French artist, Drahonet, formerly in the Equerries' Room at Windsor, but now in store. There are about ninety actual portraits of officers and men, about one foot in height, the man's name being given in most cases.

1834. *Spooner's upright series* of officers of the Army, with sixty-one plates.

1840–44. *Spooner-Hayes oblong series,* and also the Martens series.

1846. *Hayes' plates.*—More Dress Regulations and the M.A. Hayes large plates with a group in the centre and small figures in the margin. There are some examples of those plates on exhibition this afternoon—there is one over there in the window.

1847. *Raffet's sketches of 72nd and 79th Highlanders.*—These are the copies made by Mr. Lawson of Raffet's sketches of the 72nd and 79th Highlanders at Gibraltar. There are thirty figures altogether, and all sorts of ranks. It is a most interesting series.

1849–53. *Ackermann-Martens series.*

1854–55. *Photographs in Queen Victoria's albums.*—Of 1854 and 1855 there are ninety-six photographs in Queen Victoria's albums in the Royal Library. They are beautiful photographs, as clear and perfect as any that could be taken at the present time. Besides those, there is Fenton's collection taken in the Crimea. I understand that there are about 250 photographs in that collection and during the late War they were lodged with Mr. L. E. Buckell. I do not know if they are still with him or not. Then, 1855, Dress Regulations and 1854–55, Gambart's two series.

1857. *Dress Regulations.*—Inside the Dress Regulations of 1857 there is printed a note to say that an appendix would be published with drawings of various items of the officers' uniforms. This was never published, but the coloured drawings, made in preparation, are in the War Office library.

1861. *G. Thomas's series.*—This is a very fine series of coloured plates.

1866. *Infantry plates (Ferguson).*—This is a series of infantry coloured plates from photographs. There are several groups of Guards, Highlanders and so on. They are all done from photographs and very nicely coloured and issued by a man named Ferguson, but I should like to warn anybody about trusting too much all these Highland photographs. It seems that figures of the 92nd Highlanders have been made to serve for some of the Black Watch, and they are not very satisfactory. Then there are Dress Regulations for various years—1864, 1874, 1883, 1894, 1900, 1904 and 1934.

1882. *Egyptian Campaign.*—A certain number of photographs of men who served in the Egyptian campaign, 1882, are at Windsor Castle.

1888. *Simkin's plates in "Army and Navy Gazette."*—In 1888 and for some years following, R. Simkin's series of coloured plates were published in the *Army and Navy Gazette*, covering every regiment of the Army.

1894. *Stewart's photographs.*—About 1894 there is the wonderful series of photographs by Stewart, many of which were reproduced in the *Navy and Army Illustrated*.

1890–1914. *Toy books by Simkin, etc.*—From about 1890 until 1914 we have a number of toy books by Richard Simkin and others, copies of which are in the library here, presented by the late Colonel Field.

General Sources

That is the detailed part, and I now just want to run very quickly through some general sources. First of all the inspection returns have not yet been thoroughly searched. We did publish in our JOURNAL those from 1754 to 1804, but they go on for another fifty years in the Record Office, and also there are a number of them prior to 1754 at Windsor in the Round Tower. Then there are any number of War Office papers at the Record Office. An admirable index has been published for which there is a charge of £2 7s. 6d., but it is well worth it. Then, the newspapers contain many advertisements for deserters and tell you the kind of clothing the man went off in, frequently in uniform. I searched those from 1660 to 1720, but there is a lot more to be got out of them, I am sure. Then there are the museums, public and regimental, especially that of the Royal United Service Institution and the museum at Edinburgh Castle.

In the Royal Library there are fifteen cases marked "military plans." They belonged to the old Duke of Cumberland. There are all sorts of things in

them, not only plans but orders of battle with, in a great many cases, schemes of the uniforms, both British and foreign. Then, lacemakers' books: I will only instance one, Herbert's books which have been deposited in this Institution's library. Then there are metalworkers' and embroiderers' books. We have in the Library here Hamburger Rogers' book and Mr. Milne's large album.

Regimental orders. Anything you can lay hold of is sure to be interesting, particularly if it is before 1850. Standing Orders of regiments very often give full accounts of the uniforms. Then there are portraits and miniatures and, of course, there is Sir Robert Witt's library near the Marble Arch which is most useful. There are also the Prince of Wales' (afterwards George IV) wardrobe accounts in the Round Tower. I went through those and they show presentation uniforms of the Royal Artillery with scarlet overalls for full dress and various other things, and my extracts will be published in the next issue of our Army Historical. There are books of regimental Colours at Windsor and the Heralds' College. Mr. Milne published a book on the Colours of the Army.

Then there are the arms and crests of the Colonels. I made a search for these and managed to get information for about three-quarters of them. Some years ago we published those up to the Royal Dragoons and then stopped there. There was so much other matter that we have not gone on with it. These arms and crests are important. In fact, I made a note when I dealt with the Royal Dragoons that being a Royal regiment it is not likely that any personal badge would appear on the equipment of the regiment, and later came across Hawley's scheme for the troops of Light Dragoons and at once recognized the "star" on the front of the proposed cap as the crest of Hawley, "the thunderbolt."

There are R. Ebsworth's sketches from 1840 to about 1880 which he did for Mr. Milne. They were sold *en bloc* to Maggs in 1912. I do not know what has become of them. Sometimes Ebsworth illustrated a regiment of 1850 about the year 1880 so that his memory is rather at fault, but there is an enormous amount of information there, especially about bandsmen. Then there are Mr. Reynolds' albums at the South Kensington Art Library covering the whole period from 1700 to 1900 and Mr. G. H. Brennan's wonderful albums of cavalry regiments, which he is always glad to show. Let me recommend Mr. Lawson's two volumes, "Uniforms of the British Army," published by Peter Davies, which go up to 1760, and the Journal of the Society of Army Historical Research which is always full of interesting things. Four numbers are published in the course of the year and the annual subscription is only one guinea. There is a coloured plate in each number and some other illustrations. I should also like to mention that I have been asked to publish in the course of the next eighteen months or so a book through the Phaidon Press on the King's military pictures at Windsor of which there are some 2,000, British and foreign. We are proposing that there shall be 100 pages of illustrations, the size of the book is to be 14 inches by 9, so we shall get some good illustrations, and I am trying to get in as many coloured ones as the money will run to.

Now my time is up. If what I have said will stimulate some of you to undertake the study of historic military uniforms with renewed ardour, the object of this meeting will have been attained. The few acknowledged experts at the present moment are getting on in years. What is needed is for a new generation of enthusiasts to take the torch from our failing hands and carry it on in the years that are to come. I have tried to show what a wonderful field there is and how much remains to be discovered. It is up to you to take action in the matter. If the whole subject

seems too vast for you to attempt, much valuable work can be done by concentrating on some particular period or arm of the Service, or even some special regiment, and making that your own.

THE R.U.S.I. UNIFORMS COMMITTEE

THE CHAIRMAN: Before we go on with the Discussion, I have been asked to tell you something about the R.U.S.I. Uniforms Committee.

The object of the Committee is to compile a Summary or précis of detailed information, wherever it can be obtained, of the uniforms of all regiments, corps, etc., from the time of their formation up to the present day. That is briefly what we are out to do.

The Committee was formed in 1935 under the Chairmanship of General Sir Robert Whigham; there are, in fact, two committees—the Working Committee and the General Committee. There is an Honorary Secretary, and a paid Editor who does practically all the work in compiling the Summary. The Secretary of the R.U.S.I. acts as Honorary Treasurer. The Working Committee consists of some six or eight gentlemen who have specialized in certain uniforms such as Cavalry, Rifle, Household Brigade, Scottish uniforms and so on.

The General Committee is composed of all the representatives of the regiments or corps which subscribe; they are very important people because it is to them that we look for all the research work for their own regiment or corps and it is the regimental representatives who really have to feed and supply all the information to the Editor of the Summary. Considerable progress was made before the War, but for many reasons the work rather fell into abeyance while the War was on. However, in July, 1945, the Council took steps to revive it, and Sir Robert Whigham having resigned, I was asked to succeed him as Chairman.

After one of the meetings of the Working Committee we sent to all Colonels of regiments a letter re-stating our objects and telling them all about the summary of information on uniforms which we were endeavouring to compile. We also reminded them that our expenses were increasing and we asked them either to raise their subscription from 10s. to £1 a year or to make a donation of £25. The response to that has been reasonably good and in a minute or two I will ask the Treasurer to tell you about the fund's finances. I will ask him also as Secretary of this Institution to give you very briefly the policy which the Council has, after considerable discussion, decided in regard to the retention or disposal of the very large mass of uniforms which we now have in the Institution.

ELECTION OF CHAIRMAN

One further point. Now that I am no longer in London—in fact, I live a very long way from London—I think it advisable that someone in closer touch should take on the Chairmanship of this Committee and I would like to suggest, if somebody will second me, that Major-General R. G. Fielden, who is now Vice Quarter-Master-General in the War Office and has to deal with many matters regarding uniforms, is a very suitable person to take it on from me. I would like to make that proposal if somebody would second it.

CAPTAIN H. OAKES-JONES: I have much pleasure in seconding it.

The motion was then put and carried.

THE CHAIRMAN: I will now ask Captain Altham, the Treasurer, before we start the Discussion, to tell you something about the finances and the policy as regards uniforms.

HON. TREASURER'S REPORT

CAPTAIN E. ALTHAM, R.N.: The only expenses incurred in connection with the compilation of the Uniforms Summary are a modest editorial fee, and the unavoidable clerical work and postage.

In response to the circular letter which the Chairman has mentioned, twenty regiments have, so far, increased their annual subscriptions from 10s. to £1, and three regiments have made donations of £25 each in lieu of further subscriptions. The expenses to the end of this year are estimated to amount to approximately £40 and there will then be a balance of about £85 in the fund. So far as we can foresee, the subscriptions which we expect to come in during next year and the balance in hand will just about meet next year's expenses. After that we may have to think again.

R.U.S.I. UNIFORMS

It is hardly necessary for me to remind you that ever since it was formed well over a hundred years ago, this Institution has specialized in military uniforms as being part of the history and traditions of the Army, and the Museum has acquired the greatest collection of uniforms in this country. It is natural, therefore, that this should now be the recognized centre of information about everything to do with this subject. But the Museum, as one of the means of promoting the objects for which the Institution exists, has to serve many purposes, one of which is to demonstrate scientific progress. That being so, when it was being reconstituted after the War, the Council realized that it was the right time to deal with the congested state of the contents, not only to make room for new and up-to-date exhibits but also to improve the display of all the exhibits. As a result, the Museum Committee were requested to take stock generally and make suggestions as to the disposal of the things which would seldom, if ever, be shown.

The biggest problem under that heading was the vast collection of uniforms and, scarcely less, the number of Colours and flags acquired here in the course of so many years. In dealing with this problem the Working Committee and the Uniforms Committee were consulted, and eventually the Council approved that instead of uniforms lying in boxes from which they were taken only on special occasions, sometimes not for very many years, it would be better to offer them on long loan to regimental, county or borough museums, so that uniforms, etc., with special regimental or territorial interest would be seen where they were of the greatest interest.

This policy having been decided on, it is hoped that the regimental representatives or others concerned will get in touch with the Curator here—Captain Laing, and help him in the considerable task of despatching these loans. The same arrangement applies to certain Colours and flags and other articles among the exhibits which cannot be shown in the Museum.

In saying this I do not want anyone to get the impression that the Institution is parting with any treasures which may be said to be of national, as distinct from local, interest. The finest specimens of uniforms and head-dresses of the Army at various periods will always be found here, and you have only to walk through the Museum to feel reassured that the uniforms of the Army are as great a feature there now as they have ever been in the history of the Institution.

But when all is said and done, there must come a time when the originals will disintegrate through sheer old age. For that reason alone, it is important that we should work away at the records of old uniforms and this Summary or précis of where information about them is to be found now and for years to come. How complete that record can be made, will depend, as the Chairman has reminded us, on the researches of many voluntary contributors, especially the representatives of various regiments and corps, a number of whom we welcome here to-day.

DISCUSSION

THE CHAIRMAN: We will now start the discussion. I am sure that the Lecturer will be able to answer any questions put to him. If he is not able to, I hope the members of the Working Committee will assist in producing the answers.

CAPTAIN H. OAKES-JONES: General Sir Charles Loyd has drawn your attention

to the valuable work done and being done by the Uniforms Committee in compiling the volumes which you see on view this afternoon. They deal with the historical uniforms, arms and equipment of regiments of the British Army, and contain lists of known paintings, illustrations and published references to these matters and where they are to be found; some specimens of the illustrations are inserted; in some cases inaccuracies have been noted and corrected, but there is still work to be done in adding further information and drawing attention to errors in those mentioned or illustrated. Any of those consulting these volumes who note mistakes in the reproductions or descriptions are asked to help the Uniforms Committee in correcting such errors, and they should quote their authority.

Unfortunately, many artists in the past, in their paintings, illustrations in regimental histories and military books have copied errors made in earlier works, and these have been copied again by others.

In Britain, we are not so fortunate as are the French and Germans, who have for many years kept accurate and detailed records of the changes in uniform, arms and equipment. They have also had great military painters, especially in France, such as Meissonier, Edouard Detaille and De Neuville. These were historical experts and, having historical records available, their task was easier. Our artists are not so fortunate; sometimes, not finding some detail such as a back view of a uniform, they invented a pattern which was incorrect. But all those works referred to by Mr. Sumner this afternoon may be accepted as correct.

Our official Dress Regulations, giving detailed instructions, only date back to about 1822. The Clothing Regulations of 1751 and 1768 did not give detail such as shape, cut or pattern. The Dress Regulations only dealt with the uniform of officers. Regulations for the uniform of the rank and file as a rule only gave the colour of uniform, facings and lace or piping; the cut, shape and pattern were to be found in a "sealed pattern." When a change or new pattern was introduced, the old pattern was seldom kept for reference.

If in the past officers commanding regiments or other units had, on the issue of a new pattern of uniform, arms or equipment, ordered that the fact should be entered in regimental records, no matter how unimportant the new issue might seem at the time, it would have saved much time in research to-day. For instance, how many regiments kept a specimen or made a note of the numerous distinctive Patches (sometimes misnamed "Flash") worn by their Regular, Special Reserve, Service, and Territorial battalions during the 1914–18 War?

To-day, all those interested in these matters have for reference not only the great collection of the Museum and Library of the Royal United Service Institution, but also the invaluable information contained in the Journal of the Society for Army Historical Research which has been published now for twenty-five years.

LIEUT.-COLONEL O. G. W. WHITE (The Dorsetshire Regiment): Now that the Infantry is grouped, may I ask whether the Committee are planning to have Group representatives in addition to Regimental representatives?

For example, my Regiment is in the Wessex Group and I feel that in future we shall be seeing much more of our "allied" Regiments than in the past, now that we have only one battalion each. I feel that it is of importance in planning this uniform research to pay some attention to the future organization of the Infantry and to consider the possibility of having a Group representative to co-ordinate the work and advise Regimental representatives in their own Groups.

THE CHAIRMAN: I think that would be a matter for the Council to consider, but I very much doubt whether the time has come to throw the work on to a Group representative rather than the Regiment. An immense amount of information has to be obtained over the years, dating right away back to when the Regiments were formed, and a Group representative at this stage, to my mind, would be completely snowed

under. You might possibly have both, but honestly I do not think that one man could compete with it at the present time.

LIEUT.-COLONEL P. YOUNG: I should like to say that while the plan the Secretary outlined for the future of the collection of uniforms in this Institution has certain superficial attractions, it has also many dangers. For one thing, I would say that it does not at all cater for the old Militia uniforms, and when you get back before 1815, any uniform you can get of any time is worth its weight in gold to the collector. There is no real guarantee that the Institution is going on enlarging its collection. That is one thing. Another thing, as Colonel White has just remarked, is that the whole tendency of the Infantry, at any rate, is to become grouped. With the Cavalry, the tendency seems to be for it to disappear altogether. And what is going to become of their uniforms? I agree in the case of the Royal Regiment of Artillery that nothing could be more suitable than that any properties of theirs should belong to them. In the late war, they were half the strength of the English Army and they can look after themselves. I feel the regiments will regard these loans as something better, in fact, as a gift, and they will hang on to them for ever.

CAPTAIN E. ALTHAM, R.N.: It is quite true that one of the headaches we shall still have here is what is the best thing to do with Cavalry uniforms which, unfortunately, due to lack of space, we cannot show; yet it is felt strongly that they ought not to go on lying in boxes until they disintegrate.

Another problem, which looks like being an even bigger headache, is what is to be done about Indian Army uniforms. That also has had very careful attention by the Council, more particularly by the present Chairman of the Council.

All these things are kept constantly under review and what we have got to do is the very best with the very limited premises we have got. As I said, the Museum has got to serve many purposes. The collection and preservation of specimens of uniforms of all three Services is one of them—a very important one, but only one.

LIEUT.-GENERAL SIR CHARLES DOBELL: May I ask the Lecturer if he can tell me what the derivation of the word "flash" is? It has been used in this war for certain shoulder decorations, but the Royal Welch Fusiliers have been using it for 140 years as, I think, is indicated by the ribbons on the back of the collar. In the regimental records they say the word "flash" was used, but they do not know why or what it meant. Can you tell me what was its derivation and why it should be used for the ribbons worn by the Welch Fusiliers?

THE LECTURER: I think the word "flash" must mean a protection. As used in connection with the style of hairdressing adopted by Grenadiers and Fusiliers, *i.e.*, the "plaits," it would have the sense of a safeguard for the back of the coat collar from injury through the pomatum and powder used for dressing the hair. A friend of mine, who is a local builder, has informed me that "flashing" is the trade name for the covering of lead placed round the base of a chimney stack where it comes through the roof of a house to obviate the wet soaking through[1].

THE CHAIRMAN

I think you will agree with me that Mr. Sumner has given us a very interesting lecture. He has obviously done an immense amount of research in order to collect all the material for his most interesting talk. I am sure you would like to show your approval of his lecture in the usual way.

The customary votes of thanks to the Lecturer and Chairman were carried with acclamation.

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[1] See letter in Correspondence, p. 135.—EDITOR.

TOASTS IN THE ARMY

By Lieut.-Colonel C. C. R. Murphy

A TOAST may be defined as a pledge in drinking, a way of expressing a wish for the health and happiness of persons or the success and prosperity of things. The custom of drinking them certainly bears the stamp and charm of antiquity. It had its origin in love or war, and so the first person to drink a toast must have been either a lover or a soldier; he was probably both.

Fighting is the oldest craft in the world; but although a standing army is, in these islands, a comparatively modern institution, let us not forget that there has been a British Army ever since the dawn of our history. What customs prevailed amongst our prehistoric soldiers we cannot say; but in the Middle Ages, when our Army was composed of its finest material—namely, the yeomen of England—the practice of drinking toasts was already well established. And it has outlasted the voluntary Army.

No doubt regiments that existed before the days of the standing Army—such as the Earl of Pembroke's Regiment, mentioned by Shakespeare in *Richard III*—honoured toasts of their own. The custom may have been started by one or more regiments drinking a certain toast on a certain night of the week. Then, as it gathered popularity, regiments may have agreed amongst themselves to drink the same toast on the same night, until at last the custom became general and a fixed set of toasts was evolved and recognized throughout the Army. For some reason or other, these eventually became known as the Peninsular Toasts. The list is as follows: Monday, "Our Men;" Tuesday, "Our Women"; Wednesday, "Our Noble Selves;" Thursday, "Our Swords;" Friday, "Our Religion;" Saturday, "Sweethearts and Wives;" Sunday, "Absent Friends."

As will be seen, they are brief, simple and inclusive, and of course quite unconnected with politics or sects. No exception could be taken to any of them—not even to that of "Our Swords," which in those days were never drawn without cause and never sheathed without honour. These toasts, some of which may be centuries older than their collective name implies, were honoured by regiments, irrespective of whether they had served in the Peninsular War or not, which had nothing to do with the case. Perhaps the most popular of them were "Sweethearts and Wives" and "Absent Friends." The first of these was proposed by the junior officer at the table, or else was drunk informally; whilst to the second the words "and ships at sea" were sometimes added.

I believe Mr. Winston Churchill has referred to the Peninsular Toasts in his writings, though I cannot remember where. André Maurois, in *Les Silences du Colonel Bramble*, has given a list of toasts for each night in the week as drunk in the British Army, but it differs slightly from the Peninsular list.[1]

Very different in character from the above was the unofficial toast of "Bloody War or a Sickly Season," often drunk in India, but only on informal occasions. In the days closely following the Mutiny, when promotion was slow, subalterns were wont to express this sentiment and raise their glasses in the hope that if these evils came *they* might be the fortunate survivors.

The XVIIIth Century found a divided loyalty to England and, after the "Forty-five," certain regiments disaffected towards the Sovereign were ordered

[1] Among other informal toasts, that of 'Fox-hunting' was honoured from time to time by enthusiasts of the chase.

to drink his health. To salve their consciences, the Jacobite officers of the day used to stretch their glasses over their finger-bowls and drink to "The King over the water." Ever since those days it has not been the custom to put finger-bowls on the mess table.[1] Some regiments of the old Army, such as the Grenadier Guards, Coldstream Guards, the King's Royal Rifles, and many more, priding themselves that their loyalty was never in doubt, did not drink the health of the Sovereign at all. Others, equally trusty, drank it every night.

The actual procedure followed in honouring the loyal toast was marked by some interesting variations in different regiments. For example, the 1st Royal Sussex, the Royal Norfolk, the East Surreys, and the Border Regiment (except on guest nights when the band played) used to remain seated when drinking it. The Black Watch drank to the King and Queen, whilst the old 54th Foot always drank the Sovereign's health in a bumper toast. In the case of the Lancashire regiments, the loyal toast in certain circumstances took the form of "The King, Duke of Lancaster."

Special reference must be made to two toasts connected with the Peninsular War. The first of these was "The Emperor," drunk by the 14th Hussars, the origin of it being as follows. During that campaign the regiment captured part of the baggage train of the Emperor Joseph Napoleon, and amongst other things found therein was a fine silver domestic utensil bearing his coat of arms. From it the health of "The Emperor" was always drunk on guest nights. The other toast is that of "Dyas and the Stormers," drunk by the King's Own Yorkshire Light Infantry. It commemorates the gallantry of Ensign John Dyas, 51st Light Infantry, who at Badajos on three separate occasions led the storming parties in the face of almost certain death. His conduct must have been of an exceptionally high order, because the toast was sometimes drunk in the messes of other regiments—a very unusual circumstance.

Some of the regiments who served in the Peninsula celebrate particular battles of that war either at mess or by setting aside their anniversaries as regimental holidays. For instance, every year on 16th May, the old 57th Foot used to drink "To those who fell at Albuhera," in memory of the 415 "Die-hards" killed in that battle. Similarly, the 50th Foot, on the anniversary of Corunna, used to drink to the "Corunna Majors," who led the regiment on that occasion and attracted the favourable notice of Sir John Moore. The two officers concerned were Charles Napier and the Hon. Charles Stanhope, who was killed. Battles of other wars, such as Dettingen and Minden, were also commemorated; but strange to say, glasses were seldom raised to those who fought and fell at Waterloo—the most famous battle in the history of the world.

Most of the Scotch, Irish and Welsh regiments drank to the pious memory of their Patron Saint on the appropriate day, though St. George was not honoured to the same extent by English regiments. On St. David's Day, the ceremony of eating the leek was also observed by the Royal Welch Fusiliers. In the Cameronians, it was not the practice to honour toasts at all. In the case of the 1st Battalion, the origin of this goes back to the early days of the Covenanters when the drinking of healths was contrary to their religious beliefs. The 2nd Battalion, formerly the 90th Perthshire Light Infantry, did not observe the loyal toast either; but according

[1] Major R. M. Grazebrook, O.B.E., M.C., in the *Journal of the Society for Army Historical Research*.

to the wits of the day, this was because they had not been granted the Prince Regent's Allowance!

In passing, a word about this special mess allowance will not be inappropriate. It was instituted by the Prince Regent at the beginning of the Peninsular War, and amounted to £250 a year in the case of a regiment of full establishment. This enabled the officers to obtain, duty free, four pipes of port, and thus put them on a more or less equal footing with the Navy who already enjoyed a drawback of the duty on wines consumed on board ship. In those days and until recent years, no officer in the British Army under the rank of Captain could live without private means. He had to pay out of his own pocket for the honour of serving. In the Navy, the position was different; nevertheless, it was felt that there was no justification for the disparity between the two Services in the matter of excise duties. This, of course, had been the reason for its introduction; but after being in existence for just over a century, it was suddenly abolished during the reign of King George V.

One of the most inspiring regimental toasts was that of the Seaforth Highlanders, given in Gaelic by the Pipe-Major on guest nights. It ran as follows:—

> "The land of hills, glens, and heroes; where the ptarmigan thrives and where the red deer finds shelter; as long as mist hangs o'er the mountains and water runs in the glens, may the deeds of its brave be remembered, and health and victory be with the lads of the Cabar Feidh."

In 1940, a regulation was issued permitting officers to drink the King's health in water or other non-alcoholic beverages—a portent of the watery grave to which the old Army with all its traditions was about to be committed.

THE MILITARY AND ECONOMIC IMPORTANCE OF WEST AFRICA

By Brigadier F. A. S. Clarke, D.S.O., *p.s.c.*

THE events of the War of 1939-45 showed clearly the great importance of our West African Colonies as a source of raw materials vital to the Allied war effort, of products marketable for dollars, and of fighting men and labour. Those who travelled eastward when the Mediterranean was closed to our shipping will also, perhaps, have realized the superlative value of Freetown harbour as a convoy centre.

There appears to be little doubt that our economic recovery and the righting of the world unbalance will mainly hinge upon the rapid and extensive development of our African resources. For this reason, as well as the changing conditions in the Middle East and the shortage of British manpower, it is hardly an exaggeration to state that our future as a great Power depends on the use we make of the economic and strategic possibilities of our possessions in tropical Africa.

My object here is to consider the significance of our West African Colonies—Gambia, Sierra Leone, Gold Coast and Nigeria. It is not possible in an article of this nature to make an exhaustive survey; the subject is too vast. The aim, therefore, is to set forth certain facts together with some opinions and suggestions likely to be of interest to officers of the three Services as a basis for further enquiry and study.

Changing Conditions

Our withdrawal from Palestine, the uncertain position in Egypt and the Sudan, coupled with the general situation in the Levant, as well as the possible effects of modern scientific discovery, will considerably affect the security of the Mediterranean route. Nevertheless, the Middle East remains of pre-eminent importance owing to its geographical position, and as a source of oil fuel. The significance of this land junction of three continents to the British Empire has been appreciated by our enemies from Napoleon to Hitler. By the use of sea power, backed by land forces, we have been able to keep the Mediterranean route open until, in the last war, the defection of France and the entry of Italy on the side of the Axis enabled shore-based aircraft to operate efficiently in the narrows we could not control. This may happen again, even if Egypt were neutral.

We can no longer maintain our strategic reserve in Palestine or Egypt, nor use these countries for bases, as Egypt was used in 1914-18 and 1939-45. We have also lost the four Indian divisions formerly available for service in the Middle East.

All these considerations show the necessity for shifting the position of our strategic reserve and bases southward, with alternative West to East communications. There is adequate depth in Africa.

General Description of British West Africa

The four Colonies—Gambia, Sierra Leone, Gold Coast and Nigeria—are each bordered on the landward sides by French owned or mandated territories, except the part of the eastern frontier of Sierra Leone which marches with Liberia. Owing to the importance of Freetown, it should be mentioned that the country in the West and North of Sierra Leone is particularly difficult, and communications are very bad.

These Colonies have a total area of just over 500,000 square miles and a population of some 27 millions. Nigeria is the largest in area and population, the latter numbering 20 millions. Gambia is simply Bathurst, the capital, and a strip of territory along the River Gambia totalling about 4,000 square miles. The population of all these territories is still largely primitive, and much of it is good fighting material.

The coast line is very long—Sierra Leone 200 miles, Gold Coast 330 miles, and Nigeria about 600 miles. There is heavy surf all along it, except in the estuaries of the rivers where there are extensive mangrove swamps. The ports are : the anchorage at Bathurst at the mouth of the River Gambia ; the magnificent harbour of Freetown ; Sierra Leone, able to take a very large assembly of ships of the greatest tonnage ; Takoradi in the Gold Coast ; and Lagos in Nigeria. There are, however, no deep water wharves at either Bathurst or Freetown, and cargo has to be dealt with by lighter. Except Takoradi, the Gold Coast ports, including Accra the capital, are simply open anchorages outside the surf, and passengers or cargo are transported to and from the beach in surf-boats paddled by Kruboys. In addition to Lagos, the capital, Nigeria has some ports in the Niger Delta capable of taking ships of medium tonnage, the most important of which is Port Harcourt.

Near the coast the rainfall is heavy, and the combination of heat and humidity is very trying to Europeans. But in the northern territories of Gold Coast, Nigeria and to a lesser extent Sierra Leone, the rainy season is short ; and though the temperature is higher, the climate is much less trying. The usual tropical diseases occur, though much has been done within the last twenty years to improve conditions, and the Colonies can no longer claim the distinction of being the white man's grave. Animal transport cannot be used in many areas owing to the presence of tsetse fly.

In the major Colonies, there are roughly three belts—the coastal, the tropical forest and, farthest from the coast, the orchard bush. The coastal belt, except where it consists of mangrove swamps, is fairly open and cultivated. There is, however, a large area along the Gold Coast of low rolling hills extending a good way inland, which at a distance looks open, but actually is covered with scrub three or four feet high. This is quite impassable except by native trails or specially cut paths.

The tropical forest is usually found in belts of varying width near the coast and, to some extent, along the larger rivers. It consists of enormous trees with undergrowth and a tangled mass of creepers. Visibility, except in the rare clearings or patches of cultivation near villages, varies from about ten yards to practically nil. Apart from the few roads, there are only native paths just wide enough for moving in single file and, once off these paths, a way has to be cut. Clearing a path, even with trained men, is a slow process, and the best speed is about one mile an hour.

North of the tropical forest comes the orchard bush country which gradually thins out as the Sahara is approached. It consists of trees and bushes from fifteen to twenty feet high and, though men can move comparatively freely off the paths, the visibility is usually about fifty to seventy yards. This type of bush covers enormous areas in West Africa, though there are wide clearings or cultivated tracts, particularly about the larger towns in the North. Generally speaking, visibility varies with the time of year, as crops and patches of elephant grass are often six to eight feet high. In the dry season, after the crops are gathered and the grass is either burnt or dead, visibility greatly increases and in the cultivated areas, or in the vicinity of towns, may be similar to that of Europe.

LAKE CHAD
NIGER COLONY (FR.)
CAMEROONS (FR.)
Railway 3'6" Narrow gauge
0 50 100 200 300 Miles
NGURU
KANO
GROUND NUTS
ZARIA
CATTLE
BAUCHI
JOS
TIN
R. BENUE
GUSAU
KADUNA
MINNA
BARO
R. NIGER
COAL
UDI
OIL
PORT HARCOURT
PALM
SAPELE
WARRI
COCOA
LAGOS
DAHOMEY (FR.)
R. VOLTA
KUMASI
COCOA
TIMBER
GOLD
ACCRA
CAPE COAST
SALT POND
WINNEBA
TAKORADI
GULF OF GUINEA
IVORY COAST (FR.)
SAHARA
DAKAR
BATHURST
GAMBIA
R. NIGER
SIERRA LEONE
FREETOWN
LIBERIA
GOLD COAST
TAKORADI
NIGERIA
LAKE CHAD
CAMEROONS
LAGOS
0 200 400 Miles

Air observation is practically impossible over thick tropical forest. But, in orchard bush, what looks like a wall of green from the ground appears much more open when viewed from the air, and movement can be seen easily.

Apart from definite mountains such as the Cameroon, 13,000 feet, considerable hills exist in the bush and forest areas of West Africa. There are also plateaux with little or no bush, and covered with short grass. The best example of the latter is the Bauchi plateau in Nigeria.

There is a narrow gauge railway in Sierra Leone of very limited capacity, with a length of some 300 miles. The main lines in Gold Coast and Nigeria are 3 ft. 6 in. gauge and total 600 miles in the former and 1,700 miles in the latter. They are single track and run up-country from coastal termini, two in each Colony, and are linked inland. In Nigeria two long spurs run up almost to the northern frontier, and there are also some 170 miles of narrow gauge railway. The lay-out of the roads was designed so they would act as feeders to the railways, but during the last war through North and South routes were completed in Nigeria for strategic reasons. There is no rail link between British and French possessions.

Roads are of two classes, " all weather " and " dry season." The former are fit for mechanical transport all the year round, but the latter only in the dry season. The surface (laterite) is much the same on all types of roads, the main difference being in the provision of bridges, culverts, ferries, etc., though short stretches of tarred-metal road are found in Nigeria and some 600 miles in the Gold Coast.

Considerable improvement to existing airfields was made during the War, particularly at Accra in the Gold Coast and in Northern Nigeria. Bathurst and Freetown are usable by flying boats, and possibly Lagos also.

Economic Development

The major exports of the four Colonies at present are gold, diamonds, tin, iron ore, manganese, bauxite, hides and skins, palm oil and palm kernels, cocoa, cotton, ground-nuts and other oil seeds. They also ship certain minerals, timber and various tropical products, including some rubber. Nigeria has an extensive coal field and is also a producer of cattle.

To complete this brief survey it should be mentioned that the French Colonies and the Belgian Congo export similar agricultural products. The Congo, in addition, ships uranium, copper, nickel, wolfram and tin as well as jute substitutes.

If the development of our African possessions is to be the ultimate solution of our economic difficulties, adequate planning is essential. Furthermore, there ought to be close ties and co-ordination with the French, Belgian and Portugese territories. In fact, a glance at the map shows that the co-operation of all three nations is essential in the provision of the trans-continental railways necessary for strategic as well as economic purposes.

Popular imagination has been stirred by the great ground-nut scheme in East Africa, but it not clear whether this project has been adequately planned. The Governor of Ta anvika, as reported in the Press[1] apparently foresees considerable difficulty in bring the scheme to a successful conclusion. He points out the inadequacy of the railways and docks, which are sufficient only for normal needs, a condition which, he stated, is not the fault of the local Government.

[1] See *The Times*, 21st October, 1947.

Colonial development will not be achieved by oratory and wishful thinking. It is easy to announce a decision to expand the production of a valuable commodity; it may be comparatively simple for agricultural experts with abundant local labour to grow the quantities visualized; but, unless the plan provides for properly co-ordinated transport arrangements, the project will be a failure. The planning for the landings in Normandy was a colossal undertaking, but success was gained because the planners foresaw every possible requirement at each stage, and catered for flexibility to cope with the unexpected.

A plan for colonial development ought to be made in the same way, to cover not merely the main projects, but all activities complementary to them, as well as other schemes likely to compete for labour, material and transportation facilities. Moreover, the timing of the provision or expansion of the latter must be correctly judged. In other words, the plan must be based on consideration of everything relevant, from clearing the ground and sowing the crops, or mining the mineral, to delivery to the user in Great Britain or elsewhere.

This planning has a military interest too, for any major transportation or development project should be considered from the strategic angle as well. We cannot, for instance, afford to build and equip a new railway solely for use in emergency, nor should we allow one to be built which would be a danger or useless in war.

Communications in West Africa

There is no doubt that improved transportation facilities are essential to development; they are now also a strategic necessity.

It would appear that both short and long-term policies are essential. The first should aim at improving the capacity and efficiency of existing facilities; the second should comprise the major developments in communications. But in both cases due regard must be paid to the transport requirements of expanding and new agricultural or mining projects. Owing to the urgency of the economic situation, schemes likely to provide a quick return should receive priority. Once decisions are made, preliminary work on the long-term developments can be commenced whilst the short-term ones are being completed, but the latter must fit into the former.

A first step in short-term policy which suggest itself is to increase the carrying capacity of the existing railways by the provision of additional rolling stock, more passing stations, and improvements to the permanent way, bridges, etc. The through and main feeder roads should be well maintained, those bearing heavy seasonal traffic receiving particular attention and priority of material. At the same time deep water wharves at Freetown and extensions to the port of Takoradi should be commenced. In Nigeria preliminary steps ought to be taken to develop Lagos into a larger port and to improve the facilities at Port Harcourt. Furthermore, efforts ought to be made to resuscitate the River Niger route to Baro and the line from there to Minna (*see sketch map.*) The object of this is twofold; first, to relieve the southern portion of the western railway; secondly, to divert traffic to the smaller ports in the Niger Delta. The latter would be particularly important if Lagos is to be the terminus of a trans-continental railway. In addition, an adequate number of the emergency landing grounds constructed during the War should be maintained.

In the long-term policy, the first essential appears to be the doubling of the line from Minna to Kaduna and finally to Zaria or Kano. The major project would,

however, be the completion of one or more trans-continental railways. There are two routes far enough South :—

(*a*) From Zaria in Nigeria via Bauchi, thence South of Lake Chad, through French Equatorial Africa and the Congo, to link up with the Uganda railways.

(*b*) From Benguella (Lobito Bay) in Angola, through Katanga, to join the Rhodesian system North of Livingstone.

The first would be long, and possibly of doubtful economic value at first, but its main advantage would be in quicker turn-round of ships from this country or the United States of America as compared to Lobito Bay. The reason for the link with the western Nigerian railway is because the country South and East of Jos is extremely difficult, and it is doubtful if Port Harcourt could be made suitable as the main terminus. In the second, the gap is not so wide ; it is farther South, and it would yield an immediate economic return, particularly as an outlet on the Atlantic Ocean for Rhodesian copper, asbestos and other dollar-earning commodities. This line might well be linked with that running inland from the port of Luanda, which is said to be capable of development to take ships of deep draft.

Defence

The safety of our West African possessions depends primarily upon command of the sea. The other main factors are :—

(*a*) Their geographical position in regard to possible enemy land bases, and the protection afforded by the Sahara.

(*b*) Our relations with France, and the strength of the French Empire in Africa.

(*c*) The preparation we make for local defence and our use of local resources and manpower.

There should be no need to enlarge on the first and vital factor—command of the sea, except to point out that the nearest naval bases are Gibraltar and Simon's Town. The geographical position and its implications are self-evident, though it may be mentioned that small mechanized columns have crossed the Sahara from South to North, and that the possible completion of a Trans-Sahara railway from Algeria to the Niger basin is a factor which should not be overlooked.

A consideration of (*b*) is probably best illustrated by a brief reference to the events of 1940. In the Summer of that year, denuded of practically all their regular troops who were fighting against the Italians in East Africa, our Colonies were surrounded, except to seaward, by Vichy French possessions, under hostile control and provided with considerable forces, including American bombers. Gambia was practically undefended, if not indefensible. Sierra Leone—with the vital harbour of Freetown—was within range of several French aerodromes, and too close to Dakar, which was a Vichy stronghold and well garrisoned. Gold Coast and Nigeria, both sources of essential raw materials, separated from each other by French territory, and their ports within range of French aircraft, were also in an unenviable position. The Gold Coast, in fact, at that time had practically no means of defence at all.[1] All of which goes to show the effect of our relations with France on the security of our West African possessions.

[1] A description of the situation and of the measures taken will be found in "The Development of the West African Forces in the Second World War," *The Army Quarterly*, October, 1947.

As the importance of West Africa in world economy increases, so will the necessity to make more adequate provision for its defence. Freetown remains of primary importance and its defence involves the maintenance of sufficient aircraft, coast and anti-aircraft artillery. Bathurst, Takoradi and Lagos also require coast defences, though the guns may not need to be of such heavy calibre.

Although the coast lines are long, landings would be slow and difficult, if not impossible, owing to the surf and mangrove swamps. But there are a few beaches, some of them in the vicinity of Freetown and Takoradi, which are possible landing places. Infantry are therefore required for Freetown and Takoradi at least, and also for the landward defence of the Freetown peninsula. In addition, each Colony requires a mobile, properly balanced force of all arms for local defence and internal security, in addition to troops earmarked as part of a striking force. These formations must be so organized and equipped as to be capable of either moving by mechanical transport on roads, or on foot through the bush, and of maintaining themselves at some distance from roads or railways. Arrangements for expansion on mobilization would be essential.

The provision of the necessary air support will present a difficult problem. We cannot, under normal conditions, afford to tie up a considerable number of R.A.F. units in West Africa. The solution appears to lie in maintaining a small permanent force for the main defended ports and token co-operation with the mobile formations, on a largely Africanized basis, together with preparation, including co-operation with the civil air lines, to receive additional squadrons when they are likely to be needed.

The development of tropical Africa, and the southward trend of our strategic centre of gravity may well be the cause of additional defence problems, besides tending to intensify those which already exist. Forces, such as those outlined above, are undoubtedly necessary in West Africa. But the question is how are they to be provided under existing conditions.

An Army in Africa

As India increased in wealth and importance, the Army in India grew from a few companies to a large and efficient force. The same factors that led to this growth, and the general world situation, now necessitate similar expansion in Africa. There are certain factors which affect the problem :—

(*a*) The shortage of British manpower.
(*b*) Our commitments elsewhere.
(*c*) The unsuitability of West Africa for British units.

The solution of the problem lies in the expansion of the Royal West African Frontier Force, the King's African Rifles and the Northern Rhodesia Regiment into permanent African formations.. Moreover, the existence of a well trained and equipped native army in British Africa would not only offset the loss of the Indian divisions, but would be an important factor in the maintenance of World peace and our position as a first-class Power.

The role of these forces would primarily be the defence of our African possessions, and secondly the provision of an expeditionary force. The first includes the local defence and internal security of the Colonies, as well as, in the case of West Africa, the manning of coastal batteries, static anti-aircraft artillery, and the garrisons for Freetown and the defended ports. The formations earmarked for the expeditionary force would be used in certain circumstances to supplement the above by

providing a striking force in Africa ; in others by furnishing a contingent for service in tropical areas outside Africa. A further important task which could be undertaken by African troops is the relief of British units in small tropical stations, thus freeing them for the main strategic reserve.[1]

The African formations would be the Empire experts in bush warfare, both tactically and administratively, though they must also be capable of operating efficiently under more normal conditions. It should not be overlooked that these formations will require a larger percentage of infantry than is usual nowadays, because a higher proportion of eyes and ears on the ground is necessary for operations in the bush.

Finally, emphasis must be laid on the need to provide the best possible British cadres for African units if they are to attain the necessary efficiency and cohesion. African troops have distinguished themselves in two major wars in Africa, and latterly against the Japanese in Burma, but there is no doubt that the British cadre of a unit is all-important.

Conclusion

Our attention for many years has been focused on the Middle East, but now tends towards East Africa, and rightly so. But a wider view is necessary. The importance of West Africa should be clearly recognized. It lies on the flank of what in war may be our only sea route to the East. It is the starting point of future land and air routes in the same direction ; it has also great existing economic value and vast potentialities.

The economic value of West Africa is bound to become a great factor in World affairs, and the changing situation in the Middle East increases its strategic importance. " War is first and foremost a matter of movement," and it is essential that we should appreciate the significance of West and East Africa as new links in our Empire chain of communications and as bases for land, sea and air operations. It is to be hoped that not only the Services, but the Colonial administrations too, have profited by the lessons of the fall of Malaya, and that the West African Colonies will never again be in such a position as they were during the latter months of 1940. It would be interesting to know whether the Germans attempted to pursuade Vichy France to attack Freetown about that time, especially after the Dakar fiasco.

[1] See " Economy of Manpower in the Services," *R.U.S.I. Journal*, August, 1947.

EARLY DAYS OF PAKISTAN

By Lieut.-Colonel M. C. A. Henniker, D.S.O., O.B.E., M.C., R.E.

On 14th August, 1947, the Indian Army, as we knew it, paraded for the last time in Karachi. British infantry lined the streets, taking the right of the line as is their due ; then came Hindus, Sikhs, and Muslims by regiments and companies, in order of seniority, along the Viceregal route. In the distance the guns of the Royal Artillery fired a Royal Salute.

Karachi was in festival. The flags of Pakistan, still unfaded by the sunlight, fluttered from the house-tops. Bunting hung in festoons between the windows. A tram, eluding the police, rattled down the road between the lines of soldiers. The passengers were in high glee. They waved flags and shouted slogans. "*Pakistan Zinda Bad.* Long Live Pakistan." It was riling for the soldiers, but they did not show it.

" Ah, Sahib," said the Subadar-Major. " The British have been very cunning. We Muslims have our Pakistan ; the Hindus have their Hindustan ; and the British soldiers will be able to go home."

A wireless set behind me gave a warning. I called the soldiers to attention. A column of outriders on motor cycles filed past, then motor cars and an escort in jeeps. The Viceroy, in Admiral's uniform, sat stiffly in his car acknowledging the salutes. Lady Mountbatten, Mr. Jinnah (or Qaid-e-Azam, as he is called), and Miss Fatimah Jinnah made gestures appropriate to the occasion.

It was like every other street-lining parade that anyone has ever attended. The British influence, which has cast round the earth a belt of humour and strength, still gripped the Army and the people. When it was over, ' the rest of the day was observed as a holiday.' There was, however, work for the officers.

For me this consisted in verifying that certain arrangements for the Independence Day parade were adequate. There was the stadium for the Flag Ceremony, where the Qaid-e-Azam was to take the salute of the Muslim troops. (The British, except the Gunners who were required to make ' noises off ' with their guns, the Sikhs and the Hindus would not take part). It was to be a dramatic ceremony, with the hoisting of the Pakistan flag as its climax.

The parade ground looked just as it should : the rolled gravel, the white-washed posts, the tents and the polished flag pole. But round this there was consternation. " What's up," I asked ? " We cannot hoist flag," was the candid reply. The trouble was simple. No one could join the ends of the halliard so that the junction would go through the pulley at the mast-head, So I made a long splice myself. " British officers," said a genial spectator, " are very necessary in Pakistan Army." Everyone laughed good humouredly. It was not a time to observe that boy scouts can do this sort of thing just as well and more cheaply than British officers.

Back in barracks things went on as usual. The *Id* festival fell on 18th August and the Viceroy's Commissioned Officers gave a party. Hindus, Sikhs, and Muslims sat down together. Outwardly, at any rate, there was harmony.

That evening I received a telegram to say that two British officers of one of my companies away in the Punjab had been killed in Amritsar. Clearly I must go there, I could not merely write to the next of kin. So I left the cool of Karachi and flew to Lahore.

We landed at midday. The sun flamed from the sky like a drawn sword. There was a different atmosphere in the Punjab. Men went armed. The Brigadier, who lent me a jeep to visit my unit, said I must take an escort. My unit had moved to Sialkot ; so thither I went. On the way we passed the village of Kamoke. The shops on the Grand Trunk Road were burning. Muslims were looting. The escort who were Sikhs, said " Shoot, Sahib " ; but my mind was not attuned to killing, so we went ahead. The escort lectured me on the rightness of killing Muslims, till I bade them be silent.

We found the unit, newly arrived in Sialkot. The O.C. told me what he believed to have happened ; though no one exactly knew, for there were no reliable witnesses. Of one thing, however, there was no doubt : two units, one Hindu and one Muslim, had had a clash in broad daylight and two British officers had been killed.

Next day I returned to Lahore. Columns of smoke rose from burning villages. At the bridge over the Ravi, North of the city, the police stopped us. " There is a battle going on ahead," they said. A Sikh Major appeared in a jeep. " There is massacre and arson," he cried in excitement, " Come, Sir, please, and stop it." Flattered, I went about a mile. The road was clear. Where there were houses a lorry was halted. Some Muslims slunk guiltily up a side street. Corpses lay in the gutter. Near by a posse of Muslim police chatted unconcerned. A British Major (a Sapper) had also arrived. He and his driver were collecting the bodies. Some were dead. Some were dying. All were horribly mutilated. They were Sikhs. Their long hair and beards were matted with blood. An old man, not so bad as the rest, asked me where we were taking them. " To hospital," I replied ; adding to hearten him, " You're not going to die."

" I shall," he said, " if there is a Muslim doctor."

We never saw the doctor ; but an orderly at the hospital blandly announced : " There is no authority for taking dead." So we laid them on the lawn and departed.

Next day I went to Rawalpindi by road, and thence to Kashmir, where my wife was. On the road near Murree the car was stopped by a ruffian crowd with axes and poles. " Are there any Sikhs in the car ? " the spokesman asked. There was none. Our driver was a Muslim and we were suffered to proceed. " What would have happened if there had been a Sikh ? " I queried. " He would have been pulled out and his throat would have been slit like a melon. It is good to kill Sikhs."

When we arrived in Srinagar it was dark. The electric lights had fused. A crowd gathered round our driver in the arc of our head-lamps and asked of the road. (It had been closed for some days by rain.) He reassured them of the road and described with delight how a Sikh had been dragged from the car and slaughtered at the road side. Thus rumour grows.

Apart from rumour, all was quiet in Kashmir. It was without qualms that I left my wife there; particularly as I had orders to move my headquarters from Karachi to Lahore, which is within a day's motor drive of Kashmir. The Punjab Boundary Force, a force of both Indian and Pakistan troops, which had tried to keep the peace during the division of the Punjab, was to be divided on each side of the border. I was to be C.R.E. of the Pakistan troops in the Lahore Area.

I flew to Karachi, packed, and started back for Lahore in a train with my headquarters. It was not a good train. The journey should have taken 24 hours. It took three days. Many of the railway staff, not being Muslims, had gone. The engine driver feared driving at night in spite of the escort. There had been too many

attacks on trains. I sent my second-in-command (Major S. A. Mahmood, known as Sam) ahead in a jeep to meet us on arrival. As we approached Lahore conditions became chaotic. No one knew when the train would leave each station or reach the next. The engine broke down. The vacuum brakes became defective. Refugees swarmed on the roof. They were Muslim fugitives from Sikh atrocities in the East Punjab. Some had horrible wounds. They did not know where they were going. They little cared. They were in Pakistan, and they were safe. At nights they were fed at the stations. They drifted like chaff before the wind.

Lahore station was in a bad way. The platform was a mass of humanity. Men, women, and children slept, cooked, ate, gave birth or died at Nature's will. The station yard and sidings were the same. The stink was indescribable and the flies legion. There were no murders. They had ceased a few days earlier.

I shared an office with the C.R.E. of the East Punjab—locally termed The Opposition. Later he moved across the border to Jullundur. The border is nebulous round Lahore. It follows the Sutlej from the South-West to Ferozepore, thence it runs zig-zag North across to the Ravi. Lahore is in Pakistan and Amritsar is in The Union (or Hindustan).

The Army was concerned with three principal tasks: keeping law and order; transferring Hindustan and Pakistan troops to their proper sides of the border; and convoying refugees out of their territory. These three tasks were waged against a background of partisan bitterness. There were, of course, exceptions; but, by and large, there was no love lost between Indian soldiers of both sides. I shall indicate how partisan feeling affected the problems.

The maintenance of law and order presents to soldiers many undesirable aspects. Not the least tiresome is ill-gotten gain. First there is loot. When shops and factories are burnt there are opportunities for loot. Patrols sent to restore peace would surprise looters, who dropped their bundles and ran. One C.O. had a photograph of the haul of jewelry, cloth, gold and silver which his patrols had collected in this way. It would furnish the coffers of Haroun-al-Raschid. The owners could not be traced. Temptation weighed heavily on the soldiery.

Then there is reward for safe conduct. Rich Hindus and Sikhs were willing to disgorge untold wealth for safe conduct or protection. One of my officers was offered a piece of gold the size of a chocolate éclair in exchange for safe conduct to Amritsar. Another officer, when checking a company ration store, found over a hundred English sovereigns in a bag of rice. The most rickety taxi was chartered at twenty times its proper fare.

The transfer of troops provoked great acrimony. There was a set of rules governing the disposal of equipment, stores and vehicles when a unit was transferred to its proper Dominion. In certain circumstances two units would change places by train, taking over each others' vehicles on arrival. In other circumstances, the soldiers left everything except their arms and cooking pots. In other circumstances, again, two units changed places complete in every detail.

The rules for these transfers were not made by lawyers, closing every loophole. They were made by soldiers, who expected them to be interpreted with reason. But tempers were too high for this. Each side was determined to get the better of the other; the object being to send units away with the minimum equipment consistent with the letter of the law.

Friction was inevitable, and it was aggravated by what was happening in Kashmir. My wife had left before the tronbles began and I did not go there to see for myself. I only heard the Pakistan version of the story. Briefly it was this: For many years the British had maintained in Kashmir a Hindu ruler—the Maharajah—who oppressed the Muslims, who were the majority community. The British had gone. The Maharajah was free to exercise even greater tyranny. The Muslims were groaning under the lash. In sympathy with them large numbers of Muslim tribesmen from the North-West Frontier had come to their rescue. It was a spontaneous act. It was not backed officially by Pakistan; if it had been it must have succeeded, for militarily it was an easy operation. But even though it was not backed, all true Muslims must feel sympathy with the tribesmen. The Hindus, however, by superior statecraft had put themselves in the right in supporting the tyrant. With aeroplanes, tanks and guns they were throwing back the tribesmen. The devices, which the British had scorned to use against the tribes, were being freely used by the Hindus. In the wake of the soldiery went bands of Sikhs who, by arson, rape and loot drove the Muslim population before them. To offer a plebiscite was futile after this. No Muslim could remain in Kashmir any more than he could in the East Punjab.

Until about 25th October the battle was a close thing. And with Winter approaching, the importance of a road from Hindustan to Kashmir was considerable. To send Sapper units from Pakistan to Hindustan, complete with equipment, was ruin to the Muslim cause.

Living on the edge of the ring in Lahore, one could not see the rights and wrongs of the case. One only saw the Muslim view. It was held in complete sincerity by the people of Pakistan; and well it can be understood. Its implications had curious repercussions.

On about 15th October, the C.R.E. of the Opposition sent an officer to me with a plea for bridging equipment. "Don't you let him have it, Sir," I was told. "He's collecting a stock to support the Hindus against the Muslims in Kashmir." It happened that I could not supply the quantity required. I telephoned to Army Headquarters. Meanwhile an agent of the Criminal Investigation Department came to my office. He had top-level credentials. Word had got round that engineer equipment was being sent from Pakistan, and he had orders to find out more about it. I was out at the time. Sam sent the sleuth away, explaining that all decisions on equipment were recorded on paper and a copy could easily be supplied.

This was an extreme case. In a lesser degree it arose whenever a unit was sent across the border. The position of British officers was peculiar. Pakistan had asked for large numbers of British officers, and made them welcome. This business of transfer of units brought their conscience into conflict with their duty to Pakistan. They had a duty to the Supreme Commander to interpret the rules sensibly. Yet it was helping Pakistan much more to read only the letter of the law: to strip departing units of everything that the rules could be construed to allow. It does credit to the Muslims that they so seldom tried to sway the judgment of British officers. They, too, deserve some credit for their integrity.

Conscience and partisan feeling were opposed in the third activity of the Army: the convoy from Pakistan of Sikh and Hindu refugees. The Sappers had two tasks in this: they provided water supplies at the nightly halts of convoys, and they kept the roads in working order. Each convoy consisted of five to ten thousand bullock carts with ten times that number of souls. At the beginning of October

there were floods in the Punjab. Many Muslims, coming from the other side, were drowned and more still lost their cattle. From an aircraft one could see them, in thousands, standing waist deep in water. It was a pathetic sight and it contrasted with the columns of fat, prosperous Sikhs with their carts, their cattle and their horses going the other way. Whatever the causes, Pakistan was getting the worse from the deal.

In one place, however, Allah seemed to have struck a blow for the Faithful. A bridge on the Sikh convoy route was washed away. The Sikhs had a certain number of days' food. They could cross the gap in boats, leaving their cattle and carts; or they could stay with their cattle and starve. A large proportion of the Sikhs were ex-soldiers. They had seen rivers crossed, and this river was a trickle compared with the rivers of Italy and Burma.

I went to see the place with a Sikh field company commander who was waiting in Lahore for his turn to take his unit to Hindustan. The refugees, under a retired Subadar, were working like beavers, collecting boulders and preparing the banks. A bearded patriarch approached and saluted in military style. "Hundred and twenty foot, double,—single Bailey will give us class twelve, Sahib," he reported. He had the patter backwards. I promised to send the equipment, but I had not counted with the police. They forbade the lorries to go within a mile of the site. The hoped-for haul of cattle was fading. The Sikh field company, however, was not to be defeated. They carried by hand every piece of the equipment before beginning to build. And they built quickly afterwards too. There is no doubt that this prompt action lost many hundred head of cattle to Pakistan. Oriental delay would have done Pakistan a better turn. There would have been nothing criminal in it. No one would have died. And what had happened on the other side?

In arranging these things one had recourse to the telephone. This was an uphill struggle. One sometimes waited twenty minutes before the exchange answered. Then it was often to say "All lines engaged." Or, occasionally, one got a bloody-minded operator who merely cried "*Pakistan Zinda Bad*," or "*Jai Hind*" (if on the other side) and rang off. I was tempted, when my telephone disturbed me, to retaliate by shouting "Well rowed, Oxford," and replace the receiver.

It was often quicker to motor thirty miles to Amritsar and telephone from there than try to get a call across the border. This presumed that the jeep would work. Before Independence Day spare parts were in free circulation throughout India. After 15th August, because the store sheds were in Delhi, there were no spare parts in Pakistan. When a vehicle broke down there was poor hope of repair. On the whole however, motoring was as quick as telephoning.

When a vehicle crossed the border it was checked and re-checked by police and military. At the border itself it was covered by light automatics behind barbed wire and sandbags. I was never inconvenienced myself, for the sepoy responds to humour; and a mild jest seemed to ring the bell. But other ranks had a bad time.

Coming back from Amritsar a young sepoy, almost in tears, came to me as I halted at the frontier. He had been out all day with his lorry in a convoy. He had had nothing to eat, and the commander of the frontier picket would not let him pass to his barracks. I was told that no empty lorry was to pass. All had either to be carrying refugees or a note from the control post excusing them. This driver had been one of a convoy of 30 vehicles. The convoy commander, not being able to read, had been fobbed off with a note exempting 29 vehicles only. The last lorry had, therefore, no permission.

It was deliberate trickery by an officer who wanted to be a nuisance. I reported it to a Sikh Brigadier whom I knew slightly. He said he would punish the offender. He was a jovial Brigadier and he gave me lunch. We had some drinks and he became outspoken.

"I tell you, Sir," he said; the 'Sir' arising from force of former habit. "I tell you, Sir; we have paid a big price for independence. And we Sikhs are bitter against the British. For years you gave Sikh soldiers land in Lyallpur District in reward for service to you. Now you hand us over to Pakistan. You knew all this would happen. The head of the C.I.D. in Lahore knew it. He told his own subordinates before he left in August. He must have told the Government. It is all a trick to kill the Sikh community."

There are flaws in this argument; but it represents a Sikh view; the more so when influential and intelligent ones so fervently believe it themselves. Warming to his theme he continued: "But let me inform you that the Sikhs will go back to Lyallpur. Why, to-day in Amritsar there are a hundred thousand able-bodied Sikhs, all armed with swords. They could go through Lahore like a knife through hot butter. It is only a night's work."

Certainly, living in Lahore, one felt rather like a miner working at the end of a gallery. The roof might fall behind one.

In one way, however, the Sappers had an unchallenged chance to do good. That was in arrangements for receiving Muslim refugees. Herein they were helping both Pakistan and Humanity. I played a minor part only in this, but I had a wide view. The numbers of refugees, their varied requirements and the problems of resettlement baffle the imagination. The civil authorities have their work cut out to deal with them. The Sappers were mainly required to supply material and plant for temporary shelters, water supply and road making in the camps. The greatest credit is due to those who worked in the camps.

Most Muslims I met implored Englishmen to stay and help them do it. Sam introduced me to many. High and low they said the same thing. "We want to remain in the British Empire," they said. "You must underwrite Pakistan. Look at the strategic advantages; the importance of the North-West Frontier; the convenient base for operations in Persia and Iraq. You must help us to develop Baluchistan and Sind. There are coal, oil and all manner of minerals there. If you do not have these things we shall have to ask someone else—someone with more enterprise than you. But we know each other. We prefer you. You must help us in our need now."

I do not offer an opinion on the soundness of this argument. I heard it repeated with earnestness and sincerity. And the charming manners and friendliness of the people added weight to their appeal for help.

The sepoys all asked one to stay, especially the older ones, who had served long with the British. This is partly because they liked the way we ran the Army, and partly because they wondered if, in our absence, they would actually get the pensions earned in our service. When I told them that I did not volunteer to serve either Dominion after Independence Day, and that it was only shortage of shipping that delayed my leaving they said:—

"Surely, you are not really going to desert us now."

"Yes," I replied, excusing myself, "I have too many friends on both sides. It is best to go."

R.U.S. MUSEUM

THE WHITAKER MEDAL COLLECTION

By Captain W. A. Tinlin, M.C.

THROUGH the kindness of Major-General Sir John Whitaker, C.B., C.B.E., the Royal United Service Institution has recently acquired on long loan the valuable collection of war medals and decorations formed by his father, the late Colonel Sir Albert E. Whitaker, of the Northumberland Fusiliers. For many years this collection has been known by repute to be one of the finest in the Country, and medal collectors, who have been accustomed to ascertaining from their text books that a particular rare or unique medal was in the Whitaker Collection, will now have an opportunity of seeing the actual specimen.

The collection contains 1,824 medals and decorations but, owing to limitations of space, it has not been possible to display the whole of it. A careful selection has, however, been made with a view to exhibiting those of special interest or of which no other specimens are on view in any other part of the Museum.

Foremost amongst these is the gold medal which, with seven others, was specially struck and presented to the officers of the 15th Light Dragoons by the Emperor Francis II of Germany in recognition of the gallant conduct of their regiment at the Battle of Villiers-en-Couche on 24th April, 1794, when it saved the Emperor from capture by the enemy. This medal, together with the Order of Maria Theresa, which was subsequently conferred upon each of the eight officers, is that presented to Cornet Edward Butler.

Another gold medal, of which a limited number was presented by a foreign Power to the officers of a British cavalry regiment, is that conferred by the Pope on certain officers of the 12th Light Dragoons in 1794, when, after the taking of Bastia in Corsica, a portion of the regiment landed at Civita Vecchia. Twelve of these medals were issued. That in the collection was presented to Brigadier-General G. A. Madden and is accompanied by his Gold Medal for the Battle of the Pyrenees.

In any moderately good medal collection a single Gold Cross or Medal, 1808-1814 is usually regarded as its high light, but the Whitaker Collection is exceptional, for it contains two Gold Crosses without clasps, two with one clasp each, two with two clasps each, two large Gold Medals, seven small Gold Medals without clasps, two with one clasp each and one with two clasps. The Gold Cross for Vittoria, St. Sebastian, Nive and Toulouse with clasp for Nivelle, was awarded to Lieutenant-Colonel Augustus Frazer, K.C.B., who commanded the Royal Horse Artillery at Waterloo. He appears to have been an officer of great firmness of character, inasmuch as he prevailed upon the Duke of Wellington, who, at first, was not favourable to the exchange, to permit him to substitute 9-pdrs. for 6-pdrs. in the Royal Horse Artillery. Another instance of Frazer's character is shown in the speedy way in which, two days after Waterloo, he made the Prussians surrender all French guns captured by the British and which the Prussians had annexed and " regularly parked with Prussian sentries."

One of the small Gold Medals, for Salamanca with clasps for Albuhera and Vittoria, was that belonging to Sir Colin Halkett, K.C.B., who raised the German Legion. With his Gold Medal are eight other British and foreign decorations awarded to him.

The naval equivalent of the Army Gold Medal or, as it is officially known, the Naval Gold Medal, 1794, is represented in the collection by one large and three

small medals, awarded respectively to Captains Robert Calder, Sir Andrew Snape Douglas, Charles Bullen and Henry Trollope. The large medal, reserved for Admirals and First Captains, was that awarded to Captain Calder in his capacity of Captain of the Fleet, or First Captain to the Commander-in-Chief on the 14th of February, 1797, at the Battle of St. Vincent. The small Gold Medal awarded to Captain Bullen for Trafalgar, where he served as Flag Captain to Lord Northesk in H.M.S. " Britannia," is accompanied by his Naval General Service medal with clasps for 1st June, 1794, and Camperdown. His earlier award of the Gold Medal appears to be the only explanation of the absence of the Trafalgar clasp from the subsequently issued medal. Sir Andrew Snape Douglas was Second Captain in H.M.S. " Queen Charlotte " at The Glorious First of June, 1794, and Captain Trollope commanded H.M.S. " Russell " at Camperdown.

Exhibited in the same case as the Naval Gold Medals can be seen the oval gold badge with the foul anchor which was given to the Commander-in-Chief, Admirals and Captains of ships engaged on 1st of June, 1794. This one is engraved with the name of Rear-Admiral Bowyer, who lost his leg in the action and for his services was created a baronet and granted a pension of £1,000 per annum.

The 108 Naval General Service, 1793-1840, medals in the collection carry between them a total of ninety different clasps. Reference to the rolls of this medal has failed to identify any of these clasps as unique; the nearest to the claim for this distinction is " Sealark, 21 July 1812." This clasp commemorates the engagement between the British schooner " Sealark " of ten 12-pdr. carronades, under the command of Lieutenant Thomas Warrand, and the French lugger privateer " Ville de Caen " of sixteen long 4- or 6-pdrs. The latter vessel was carried by boarding after an action lasting an hour and a half. Only four of these clasps were issued, and two of the medals bearing them are in the collection, namely, those of Lieutenant Warrand and Thomas Dunford, A.B. The former also bears the clasp for St. Vincent and the latter that for Guadaloupe.

Another Naval General Service medal of outstanding rarity is that awarded to a Marine named Noah Brittle. This bears three clasps: " Diana 11 Sept. 1809," " 24 Dec. Boat Service 1810 " and " Endymion " with " President," of which five, six and sixty-one respectively were issued. The " Diana " clasp was awarded for the capture of the Dutch brig " Zefir " of 14 guns by the ten-gun brig " Diana," Lieutenant W. Kempthorne; the Boat Service clasp for the destruction of the French frigate " L'Elize," 40, by boats from the " Diana " manned by volunteers under Lieutenant Thomas Rowe; while the third clasp commemorates the capture of the American frigate " President " by the frigate " Endymion," Captain H. Hope, on 15th June, 1815. This third engagement was the last of the naval actions for which gold medals were granted to officers of the Navy, it being decided that henceforth special services should be rewarded by the Order of the Bath.

A celebrated unique, although probably unofficial, naval medal may be seen in the group of George Milner, Gunroom Steward, H.M.S. " Investigator." This group comprises the medals for China, 1842; Arctic Discoveries, 1818-1855; and Meritorious Service, Arctic Discoveries. This last medal, of which no similar specimen is known to exist, is believed to have been presented to Milner by officers of the Arctic expedition in recognition of meritorious service. It has been converted from the Naval Long Service and Good Conduct Medal, William IV type, by the removal of the raised letters from the reverse and the substitution of the engraved inscription " Meritorious Service, Arctic Expedition, 1854."

Before leaving the naval medals, attention should be directed to another rarity, namely, a specimen of the gold medals given to Blake and Monck (Joint Generals at Sea), Penn (White Squadron) and Lawson (Blue Squadron) for the several engagements with the Dutch in June and July, 1653.

The Military General Service medals, 1793-1814, range from those with one to those with thirteen clasps and are in many cases accompanied by the recipients' Waterloo or Regimental medals.

The medal awarded to J. B. Lapierre of the Canadian Militia, with clasps for Fort Detroit, Chateauguay and Chrystler's Farm is unique inasmuch as it is the only one issued with all three of the clasps authorized for the military operations against the United States in the early part of the last Century.

Another rare combination of clasps on the Military General Service medal is to be seen on the medal awarded to Thomas Dolphin, Artillery Driver, which, in addition to the Maida clasp, bears nine clasps for the Peninsular War, including that for Sahagun and Benevente.

The Waterloo medals are arranged according to the divisions and brigades to which their recipients belong, and include those of each British regiment of the Line and battalion of the Guards present, as well as almost all those of the King's German Legion and Hanoverian Army. Two British regiments—the 13th Light Dragoons and the 42nd Foot—are represented by the medals of their Commanding Officers, Lieut.-Colonels Patrick Doherty and Sir Robert Macara, K.C.B., respectively. As the latter was killed at Quatre Bras, his medal was posthumously awarded, which presumably accounts for its very fine condition.

Owing to lack of wall space, the Hanoverian Waterloo medals are not exhibited.

The rarest types of the medals issued by the Honourable East India Company at the end of the XVIIIth and beginning of the XIXth Century are well represented. All five varieties for Seringapatam, 1799, are included, namely, the gold, silver-gilt, silver, bronze and tin. The gold medal is enclosed in a glazed frame inscribed on its rim to the effect that it was from the Honourable Court of Directors to Major-General Braithwaite. A second gold Seringapatam medal, also in a glazed frame, is inscribed to Lieut.-Colonel Robert Gordon, Adjutant-General of the Army of Bombay.

Two other large gold medals issued by the East India Company are, if not actually unique, the only specimens in any known collection. They are for Deccan, 1784, and Mysore, 1791-1792. Other gold medals of this series included in the collection are those for Rodriguez, Bourbon and Isle of France, 1809-1810; Java, 1811; Burma, 1824-1826; and Coorg, 1837.

Amongst the medals relating to the first Afghan War is the Order of the Dooranee Empire, which was instituted by the Shah Soojah-ool-Molk, on his restoration to the Kingdom in 1839, to reward the British officers by whose aid it had been effected. Beside it is the somewhat crude Punjabi Order of Runjeet Singh, consisting of a gold star inset with brilliants and emeralds. No record can be traced of this Order having been conferred on anyone in the British Army.

With the medals for the wars in China in the middle of the last Century is a group of three awarded to Private Charles Mullen of the 67th Regiment, which includes the China medal with clasps for Taku Forts 1860 and Pekin 1860, the Long Service and Good Conduct Medal and the Chinese Imperial Decoration of the Crystal Button. This last decoration was instituted by the Chinese Government

for the purpose of rewarding foreigners. The colour of the button denotes the grade of the Order, namely, red for the first class, blue for the second, green for the third and white for the fourth. Two officers and six privates of the 67th Foot were awarded this decoration for their services against the rebels in the Northern Province in 1862 and 1863, and for drilling the Chinese troops in European tactics.

The New Zealand medals for the two Maori wars include two with the rare single dates 1846 and 1847, of which only four and five respectively were issued. The first of these was awarded to J. Cobden, Ordinary Seaman, H.M.S. "Driver," and the second to J. Lloyd, Cooper's Crew, H.M.S. "Inflexible."

Another rare memento of the Maori wars is the New Zealand Cross awarded to Trooper William Lingard of the Kai Iwi Mounted Volunteers for his gallant conduct before the enemy on 28th of December, 1868. While the troops were reconnoitring the enemy's position at Taurangaika, Trooper Lingard rode past the Pah at the distance of about forty yards and cut with his sword the tether line of a horse belonging to the enemy, brought it to one of his comrades whose horse was shot, and assisted him to mount.

The conditions relating to the New Zealand Cross were almost exactly similar to those for the Victoria Cross, and the recipients received an annual pension of £10. Twenty-one of these Crosses only were issued.

As one would naturally expect, the collection is rich in medals and decorations awarded to the Northumberland Fusiliers. Outstanding amongst these is a pair awarded to T. S. Clerk, K.H., Lieutenant, 5th Foot, these being his Military General Service medal with clasps for Roleia, Vimiera, Corunna, and Busaco, and the small gold cross of a Knight of Hanover.

A fine series of the 5th Foot Regimental Medals for Merit, established in 1767, includes one of brass with St. George and the Dragon facing in the reverse direction to all other medals. This medal is probably one of the original issue.

Regimental medals, given usually by the officers of a unit in reward for good conduct or bravery, include in this collection several extremely rare, if not actually unique, specimens. Chief amongst these are the skull and sword decoration for "The Best Swordsman 1801" to Owen Reilly of the 27th Foot, the Good Conduct medal to Wm. O'Brien of the 62nd Foot, the Irish Ordnance Medal to Clerk of Works Wm. Monks and the Cape Mounted Rifles medal to Thomas Duncan. This last was one of the thirty presented by Sir H. G. Smith, Bart., G.C.B., to the members of this Colonial Corps who escorted him on the occasion of his return from Fort Cox to King William's Town through a country swarming with enemies.

Before leaving the subject of Regimental Medals, attention is drawn to the two "Forlorn Hope" medals in the collection, both these forerunners of the Victoria Cross being issued regimentally. One of them was awarded to Coterell Little of the 44th Foot, a volunteer in the leading column of attack at the assault of Badajoz, 6th April, 1812. Only two other specimens of this rare medal to a man of the 44th Foot are known. Sergeant Little also had the Military General Service medal with three clasps, the Waterloo medal and the Army of India medal with Ava clasp. These last three have, however, been separated from the Badajoz medal and are in another collection.

The other Forlorn Hope medal is the one awarded to Arthur Hammell of the 52nd Foot, a volunteer in the leading column of attack at the assault of St. Sebastian. It is accompanied by his Military General Service medal with nine clasps.

There are three Victoria Crosses in the collection—one naval and two military. The naval Cross, which, unfortunately, is not accompanied by the recipient's other decorations, was presented to Seaman Thomas Reeves in Hyde Park by Queen Victoria on the 26th June, 1857, for his gallantry at the Battle of Inkermann when, with Seamen Gorman and Scholefield, he defended a battery under a heavy fire and against vigorous attacks.

The Victoria Cross awarded to Corporal Philip Smith of the 17th Regiment is accompanied by his Crimean medal with the Sebastopol clasp, French Medaille Militaire and the Turkish Crimean medal. The award was made for his repeatedly going out in the front of the advanced trenches against the Great Redan on 18th June, 1855, under a very heavy fire, after the column had retired from the assault, and bringing in wounded comrades.

The other military Victoria Cross, belonging to Lance Corporal John Sinnott of the 84th Regiment, is accompanied by his Mutiny medal with clasps for Lucknow and the Defence of Lucknow and his Long Service and Good Conduct medal. In his case, the award was made for conspicuous gallantry at Lucknow on 6th October, 1857, in going out to rescue an officer who, in carrying out water to extinguish a fire in the breastwork, had been mortally wounded and lay outside.

Not the least interesting portion of the collection in point of rarity or brilliancy is that which includes the foreign decorations, especially those awarded to British soldiers and sailors, to some of which reference has already been made.

The Turkish gold medal, instituted by Sultan Selim III for services to the Ottoman Porte by the British Army and Navy under Sir Ralph Abercromby and Lord Keith in Egypt in 1801, is represented by four different types and sizes including the rare medium-sized medal embellished with diamonds.

Another jewelled gold decoration is the Abyssinian Order of Solomon's Seal presented to Vice-Admiral Sir William Hewett, V.C., K.C.B., K.C.S.I., by King John of Abyssinia after the signing of the Abyssinian Treaty.

A foreign decoration of which collectors sometimes hear, but seldom see, is the Spanish medal for Bagur and Palamos which was granted by the Supreme Juncta to the crews of H.M.S. "Ajax," "Kent" and "Cambrian" for the service they performed in repulsing the attacks made by the French upon those towns on 10th and 14th September, 1810. Some of these medals were of gold, the remainder silver; that in the collection is one of the latter and is engraved on the reverse with the initials of the recipient, "J.D."

The last decoration in the collection to which reference will be made as being of special interest is the French Order of the Réunion, instituted by Napoleon in 1811 and abolished by Louis XVIII in 1815. This identical Order belonged to the ill-fated Marshal Ney and was purchased from his widow by a Mr. Benjamin Hopkins, of Highbury Terrace, London—a tallow merchant and collector of medals, particularly those of Napoleon.

Space will not permit this article to deal individually with more of the collection, but a visit to the Wolseley Room in which it is exhibited is recommended to all those interested in medals and decorations, either as collectors or as students of our naval and military history.

THE INTERNATIONAL SITUATION

BRITISH FOREIGN POLICY

THE London Conference of Foreign Ministers, as was expected, broke up without making any progress towards an agreement on the vital problem of Germany's future and the scarcely less pressing one of Austria. The atmosphere in which negotiations had to be conducted could hardly have been more unpropitious, due, as usual, to the uncompromising and boorish attitude of the representatives of the Soviet Union: "try to imagine what it is like to sit there, hour after hour, and to be called by almost every piece of invective of which one can think and not answer back," is how Mr. Bevin described it. No other conclusion is possible than that though they came to the Conference, Mr. Molotov and his satelites had no intention of making any sort of agreement, and every intention of leaving confusion worse confounded. This attitude is entirely consistent with that adopted by the Kremlin towards the Marshall Plan: to quote Mr. Bevin again: "It has been clearly stated that the object of . . . Soviet and Communist policy is to prevent the European recovery programme succeeding."

A WESTERN EUROPEAN UNION

In a forthright and realistic speech to the House of Commons on 22nd January, the Foreign Secretary, having reviewed the continual and patient efforts made since the end of the War to develop a working partnership with Soviet Russia in restoring peace to the World, remarked, "Now we have to face a new situation," and after a warning that it was impossible to move as quickly as we would wish, he added, ". . . the free nations of Europe must now draw closely together. I believe the time is ripe for consolidation of western Europe." The rest of his speech made it clear that this is to be the keynote of British Foreign Policy from now on.

First in this context Mr. Bevin placed France, with whom, he said, we have a firm basis of co-operation in the recent Treaty of Dunkirk. The time had also come "to find ways and means of developing our relations with the Benelux countries"—Belgium, the Netherlands and Luxemburg. "We shall have to consider the question of associating other historic members of European civilization, including the new Italy, in this great conception," he added.

Alluding to Germany, he recalled that she, more than anyone else, was responsible for the mess the World was in, and warned her that, if she thought we were going on feeding her she was labouring under a delusion. She had to work for recovery like other nations. He had been pressed to agree to some kind of parliamentary instrument in the bi-zonal area, but he had opposed it because he felt it would mean a final division of Germany and of Europe. There would shortly be an exchange of views between Britain, the United States and France on the three zones.

Of Austria, Mr. Bevin remarked that he could not understand why a nation of two hundred million people like Russia should find it necessary to delay a settlement with a small country of seven million: "This torture of Austria for all these years was really reprehensible."

On the situation in Greece, Mr. Bevin had to say: "It had been assumed, in fact said, that the Soviet Union could wait, that the United States and Great Britain would get tired; . . . in the end a Communist Government would be forced on Greece and she would be incorporated in the Soviet system of Communism with the rest." He wished to make the position of H.M. Government quite clear. They had

been trying to leave Greece an independent country and get out of it, but they wanted her northern neighbours and everyone else also to leave her alone and get out. The United Nations had been brought in, but they had been flouted by the Balkan neighbours. He warned them and "their Soviet mentors" that "Provocations like these sometimes lead to serious developments," and it would be better to settle this matter in accordance with the Assembly decision of the United Nations than by promoting civil war or giving any kind of recognition to the Markos [rebel] government.

OUR OVERSEAS INTERESTS

Dealing with oversea territories, the Foreign Secretary said that the intention is to promote close collaboration with the Commonwealth and with the oversea territories of the French, Dutch, Belgian, and Portuguese. The raw materials, food, and other resources should be of mutual advantage to those territories, to Europe and the World.

The Middle East, he had repeatedly said both to the United States and the Soviet Union, was a vital factor in world peace, and it was a life-line for the British Commonwealth. He thought that fact was generally accepted. He alluded to the part Britain had played in promoting the development of Arab countries during the past 30 years, and to recent contacts with their rulers. In the case of Egypt, he hoped to get away from the atmosphere of past disagreements, perhaps at an early date.

Turning to Japan, Mr. Bevin said that the Soviet Union wished the Peace Treaty referred to the Council of Foreign Ministers—"not a very encouraging prospect," he remarked. He admitted that the maintenance of Russian forces in the maritime provinces before they came into that war probably had an effect, but the actual time Russia was in the war was only a few days. Yet he was asked to agree to her taking a predominant position over allies who had fought all the way through. It had been proposed that the thirteen or fourteen countries involved should form a peace conference. They were more likely to clear up the Far Eastern position, and he hoped that the Soviet Union would agree and let them get on and make one good peace treaty.

In concluding a speech, which was widely recognized as being momentous, the Foreign Secretary remarked, "We shall not be diverted by threats or propaganda, or fifth-column methods, from our aim of uniting by trade, social, cultural, and all other contacts those nations of Europe and the World who are ready and able to co-operate. The speed of our recovery and the success of our achievements will be the answer to all attempts to divide the peoples of the World into hostile camps."

A SUMMARY

In the light of the Foreign Secretary's statement, British foreign policy can be summarized as follows:—

1. While the door is left wide open on our side of the Iron Curtain, there will be no policy of appeasement towards the dictators in Moscow in their endeavours to create Police States in and force a Communist regime on weaker Powers.

2. Britain will head a "stand up to Russia" movement by promoting economic, social and psychological unity amongst the western European Powers. This will be in full conformity with the spirit of the Marshall Plan which assumes that the nations who need America's help will show that they merit it by doing everything possible to help themselves and each other.

3. Britain has no intention of surrendering her vital interests in the Middle East to any aggressive invader; but will seek to continue and promote good relations with the rightful occupiers of those territories, notably the Arabs, Egyptians and Persians.

4. It follows that the Mediterranean and its littoral are of greater, rather than less strategical importance to us than ever, and as we are voluntarily clearing out of Palestine and eventually shall be leaving the Canal Zone, we must look elsewhere for safeguards for this part of our Imperial life-line.

5. Air power is now the predominant partner in the wardenship of those narrow waters; therefore we must be assured that any would-be aggressor will be denied the use of air bases which might threaten their security. It must be our policy to support against any such potential aggression the friendly Mediterranean nations, more particularly France, Italy, Greece and Turkey; to stop any potentially hostile Power from infiltrating into North Africa; and to retain or acquire air bases well placed strategically to safeguard the sea route to and through the Suez Canal in partnership with those Powers which share our interests.

6. In the East, Britain's responsibilities towards the new Dominions of India and Pakistan are particularly great while they are going through their political birth-pangs and are, as yet, ill prepared for self-defence.

7. The revival of British trade in the Far East is one of the few bright spots in the present gloomy economical picture. Progressive recovery will depend largely on the extent to which our foreign policy aids in rebuilding our prestige in that part of the World.

The article which follows shows how the tentacle of the Soviet octopus is trying to extend its grip via Korea.

THE PART OF THE SERVICES

It is sometimes thought that the only role of the Services in peace time is to provide a sort of background of physical force to diplomatic effort, and that, as the World becomes more enlightened, the Powers can be relied on to settle their differences through the medium of U.N.O., and the military background should increasingly fade out. This is the League of Nations mentality all over again.

At the present moment, U.N.O. is dealing with a number of critical problems—the control of atomic energy; Greece; Palestine; India and Pakistan; Korea, to name some of the more highly explosive. Palestine is likely to be the first test of whether an international and diplomatic organization can take over from the British Army and maintain order in a country seething with unrest and peopled by races seemingly intent on cutting each other's throats at the first opportunity.

The vital part played by the Services in *preserving peace* and so giving diplomacy a chance to do its job is too often forgotten. In an article[1] in the JOURNAL of November, 1948, reviewing Lord Chatfield's book, *It Might Happen Again*, the grave danger of reducing our policing forces was recalled in the light of what happened before the War, and it was shown that we are rapidly sinking into this same, if not a worse pit of impotence.

Although little or no official information is given about the distribution of the small fleet we now maintain in full commission, it is not difficult to piece together information which has appeared in the Press and to arrive at a clear picture of the way in which our naval forces at home and abroad are being whittled away. We may

[1] "Is it Happening Again," by Navarino.

be quite sure that our increasing naval weakness does not escape the notice of foreign Powers, especially when it is advertised by statements in Parliament about the scrapping of battleships and cruisers and the undermanning of ships to such an extent that they cannot go to sea. Whatever the utilitarian aspect of the scrapping policy and the economic necessity for undermanning or laying up, publicising these matters can hardly be assisting our foreign policy, our prestige, or our markets. A typical product of this situation is the Argentine's challenge to our right to Antarctic territory and even to our occupation of the Falkland Islands. Here is a friendly nation, with whom it is in our mutual interests to trade in a large way, yet who, largely for internal political reasons, finds it timely to dispute our interests by flaunting her small navy while our great fleet is paralysed.

Essential as it is that the Services be organized and equipped for war, peace cannot be maintained with bombs, whether high-explosive or atomic. It is the policeman on the spot who commands respect and preserves order. The Army's part in peace time is necessarily confined to garrisoning our own countries. The extent to which the Royal Air Force can "show the flag" by good-will visits is necessarily limited. But the Navy, with its self-contained mobility and self-evident potentialities is still our best world-wide policeman as well as being our best ambassador.

THE POLITICO-STRAGETIC PROBLEM OF KOREA

By WILLIAM COURTENAY, M.M.

(War Correspondent to Kemsley Newspapers in the Pacific Areas, Japan, and Korea—1942 to 1946, and Hon. Life Member of 8th U.S. Cavalry Regiment.)

It was agreed at the Yalta Conference that at the close of the war with Japan, all Japanese forces North of the 38th Parallel of Latitude should surrender to the Russians; this included forces in northern Korea. Those South of this Parallel were to surrender to the Americans. It was never expected that this agreement would lead to the country being divided by an "Eastern Iron Curtain"; yet that is what has occurred.

Originally there were some ten million Koreans in the Russian zone; but up to three million fled South into the American zone. This brought the population up to twenty millions in that area. Refugee camps had to be set up; a housing problem arose which in Seoul—the capital, with 200,000 refugees, is acute. The Russians have now banned such movements and imposed the death penalty for anyone caught crossing the Parallel.

The bulk of the heavy industries lie in the Russian zone, which though larger geographically than the American zone yet has less fertile areas and so holds a smaller population. Coal, iron, and all the sources of the hydro-electric power which feed the railways and which supply electric current to all Korea, lie in the Russian zone.

In the South are the agricultural areas and the rice belt. Lieut.-General John R. Hodge—the American commander in Korea, whose headquarters are at Seoul, was from the first given authority to make decisions on the spot in the interests of a United Korea; but the Russian General on the other side of the Parallel has to refer the most minute items to Moscow.

Unfortunately, all suggestions for the exchange of the crops of the South—badly required in the North, for the coal of the North—equally acutely required for the railways in Korea and in Japan, have been turned down. The Russians allow mail from persons in the American zone to travel by the solitary rail link

to relatives in the North and vice-versa. (They can, of course, exercise a censorship over it in both directions and thus learn a good deal of what is happening in the South.) They do not permit any co-operation beyond this concession. They even control the amount of electric light which General Hodge may consume at his headquarters or his house: a given number of kilowatts per week are allotted to the American zone; the Americans must themselves ration it and pull out the switch when loads exceed the ration, otherwise the Russians would pull out the master switch. The U.S. Government is loth to spend money on equipping her garrisons there with a separate electric supply because of the cost and the fact that they hope to take the American troops away soon.

In the North a trained army of Korean Communists has been formed and armed. It is thought that they could sweep into Southern Korea and take possession of it if they wished. The rise of this Russian trained Leftist army has brought its inevitable counter-part—the rise of Rightist forces in the South. The latter are largely of Fascist complex, and there is not much to choose between their ideologies! The forces in the South are, however, unarmed and only united on two matters—hatred of the Communists and a demand for an early American withdrawal. On all other matters they are hopelessly divided. Chief spokesman among them is Singman Rhee—an aged Korean patriot who has lived in America for many years. He returned to Korea last year; is building a house with guards round it at Seoul; and is pleading with General Hodge to hold a General Election prior to the work of the U.N.O. Commission. His plea is that the Commission should consult the chosen representatives of the people—meaning himself as leader. As arranged at present, they will consult certain nominated and appointed representatives as well as Singman Rhee and other political pundits. He argued his case most smoothly and ably when I spent an evening with him at his new home at Seoul in December. It is General Hodge's firm view, however, that any elections will be rigged by Singman Rhee and other Rightists to exclude all but their own followers from voting, or they will simply draw up a list of their own candidates and persuade the peasantry that these are really the elected representatives. General Hodge is therefore trying to form a middle-of-the-road party which could govern Korea and avoid the extremes. He admits it is probably too late, since any leaders with moderate ideas already stand in danger of vengeance from either or both flanks if they declare themselves.

Thus the issue may degenerate into civil war after the U.N.O. Commission holds its elections. There is another problem: unless U.N.O.—which means American troops—protect the ballot boxes and assure secrecy of the election, there will be intimidation and the election will be rigged. But if they do, the parties of the Left may refuse to vote, alleging that it is the Americans who are rigging the elections in favour of the Right. This would give the Communist party in the South—at present a force which has gone to ground—excuse for trying to seize power and for inviting in their colleagues from the North.

To cope with this difficult situation, the Americans have two under-strength divisions in Korea. At the 38th Parallel, which runs across the neck of 270 miles of territory between the Yellow Sea and the Sea of Japan, American and Russian outposts face each other.

I spent some time there last December. The Parallel is easily reached from Seoul by a good road which staff cars may traverse, covering the 40 miles in about 1½ hours. There is no continuous line of barbed wire or other defences. There are a series of outposts and the Parallel has been delineated arbitrarily, often cutting

a farm off from its house so that the occupants must leave the Russian zone to farm in the American zone or vice-versa. Fifty yards away across " no man's land " in arid, hilly country sit the Russians with gun emplacements and artillery in position facing the American lines. No one dare stray across without certainty of arrest ; of being grilled ; and of being returned after a few days. Every two hours telephones ring all along the American outposts, checking the safety of the garrisons and assuring that communications have not been cut.

It is unlikely that the Russians will permit the U.N.O. Commission to hold elections in the Northern Zone ; but they may hold them themselves, allowing, of course, only Communist candidates and returning a Communist majority. Should the majority in the South vote Communist, we may be presented with a problem of uniting the two Zones under a Communist Government—remotely controlled of course from Manchuria. The Americans, therefore, are faced with the alternatives of withdrawing before the situation deteriorates, or of finding themselves in the midst of a civil war with inadequate forces to keep the peace.

But whether withdrawal takes place before 31st March or later, elections will have another effect. Whoever controls the airfields of Manchuria and of Korea will have a certain degree of strategic control of Japan. From the large number of airfields on the mainland much air power could be deployed against the islands of Japan where the numbers of airfields are limited. For this reason America is placing Okinawa, 360 miles South of Japan, in a strong state of defence. Up to thirty airfields were laid out there between May and August 1945, ready for use for the invasion of Kyushu—the southern island of Japan. From the combined airfields of Okinawa and Japan, America would be able to muster sufficient air strength to counter any attempt on the part of another Power to deploy great air power in Manchuria and Korea. Nevertheless, if Korea fell into unfriendly hands, American forces in Japan would to some extent be menaced, and withdrawal from Korea will probably mean that the Communist army of the North, aided by Communists in the South will take possession of the whole country.

General MacArthur told me he thinks that Korea is now a United Nations liability, not a purely American problem. But in practice it is a burden on the only Power possessing military forces there, for they alone would have to act and bear the sacrifices, since U.N.O. possesses no armies. The outcome of the U.N.O. Mission now in Korea will therefore be watched with interest.

CORRESPONDENCE

(Correspondence is invited on subjects which have been dealt with in the JOURNAL *or which are of general interest to the Services. Correspondents are requested to put their views as concisely as possible, but publication of letters will be dependent on the space available in each number of the* JOURNAL.—EDITOR.)

"OPERATIONS IN NORTH AFRICAN WATERS, 1942-43"

To the Editor of the R.U.S.I. Journal.

SIR,—As a reader of the JOURNAL for over forty years, may I say that your review of Captain Samuel E. Morison's *Operations in North African Waters*, 1942-43, in the issue of May, 1947, is very far from presenting a fair estimate of the value of the book. It states that the precise status of the book is hard to define. Its status can be defined without difficulty. It is a history based on official sources, written by one of America's most distinguished historians, who was attached to Headquarters, Amphibious Force, Atlantic Fleet. He was given every facility by the U.S. Commander—Admiral H. K. Hewitt, U.S.N., and the final version was carefully read by Rear-Admiral Vincent R. Murphy, U.S.N., Director of Naval History.

Exception is taken to the sources in that "some are official but others are not always the best evidence." But it is permissible to think that Captain Morison, the American historian, is possibly the best judge of American sources and of what constitutes historical evidence. Some of the most reliable accounts in Corbett's works and in many other histories are derived from the personal memoirs of subordinates and not from official reports.

Again it is stated that the most serious fault of the book is that it fails to do justice to the "great triumph" of these operations—the close integration and planning of the whole. But the book is not about the planning; it is about the execution of the plan. To describe the planning would have required a much larger, and certainly, for the public, a much duller, book.

Again your reviewer remarks that the book is chiefly concerned with the American operations at Casablanca and so presents "a somewhat unbalanced picture of the campaign as a whole." This is to misconceive the purpose of the book. The book deals chiefly with Morocco and Casablanca because it is written for Americans and this was the American area of the operations. The balance of history is maintained by reading several books, not by looking for everything in a single book. It devotes over fifty friendly pages to the British operations and the British history will no doubt deal in greater detail with the British side and adjust the balance accordingly. It presents a very fair and impartial picture in an easy and strictly scholarly setting.

An important aspect of the book is that it constitutes at present the only published account of this important campaign. It is with pleasure, therefore, that one can agree with your reviewer that it is "well-written and makes easy reading" and one may add that in its impartiality, its lucidity, its happy choice of detail, its numerous illustrations and maps, it constitutes an essential and interesting volume of what promises to be a very useful series.

ALFRED C. DEWAR,
Captain R.N. (retired) (B.Litt.F.R.Hist.S.).

SIR,—Captain Dewar complains that the Review of Captain Samuel E. Morison's *Operations in North African Waters*, 1942-43 in the JOURNAL for May, 1947, does not present a fair estimate of the value of the book. He quotes the credentials of the author—which are not in dispute, but he omits to quote the statement of the U.S. Secretary of the Navy in the latter's introduction: "This work is in no sense an official history." It is this disclaimer which makes the status of the book difficult to define.

Without entering into academic discussion of the definition of "best evidence," the practical answer is that it is the most authoritative and reliable evidence. The

reviewer joined issue with the author because of his tendency to base statements of opinion on the evidence of subordinates who were not always in a position to know the facts and who were on occasions writing loosely, because they were writing newspaper articles or private letters as opposed to rendering official reports.

It is illogical to say that a book with this title need have no concern with planning. All the operations in the Mediterranean after the initial landings were planned in that theatre. It is the author's failure to grasp the fundamentals on this point in his remarks on planning which called for the reviewer's criticism. This was a most important aspect of the operations and one highly necessary to be stressed if the public is to know the correct facts.

Captain Dewar, in his letter, has extracted part of a sentence from the context of its paragraph in the review and complains that the book has been unfairly criticised as presenting a " somewhat unfair picture of the campaign as a whole." If the reader is sufficiently interested to refer to the original he will see that this is quite unjustifiable.

We are in agreement that the book deals chiefly with the Morocco and Casablanca operations (because it is written for Americans), but to justify a claim to be regarded as a balanced history of " Operations in North African waters, 1942-43," it should be worthy of that comprehensive title, or else one should have been adopted which would make clear the limitations of this work.

YOUR REVIEWER.

ANTI-AIRCRAFT DEVELOPMENTS

To the Editor of the R.U.S.I. Journal.

SIR,—I read with great interest the Trench Gascoigne Prize Essay for 1946, published in the May number of the R.U.S.I. JOURNAL. The author, Squadron Leader S. L. Swain, in the course of an excellent survey of the lessons learnt since 1939, makes two statements which, in my view, go further than the known facts warrant.

In the fourth para. of page 176 he says, " On the other hand the German *Rheintochter* radar-controlled anti-aircraft rocket might have prohibited the use of the heavy bomber in a strategic role had the War continued for three or four more months," and again in the sixth para. of the same page he says—" Its (the R.A.F's.) main offensive weapon is comparatively useless against the new anti-aircraft defences."

Both these statements may come true in the course of time, but as a description of the present situation they are misleading. The German anti-aircraft rockets and guided missiles, including the *Rheintochter*, were in an experimental stage at the end of the War, and all of them would have required some considerable time, probably a couple of years, before they were in production. Even then their efficiency in bringing down bombers would still have to be tested.

All research and development since the War have confirmed that there is a long way yet to go before an effective guided weapon for anti-aircraft use will become available for operational use.

12th January, 1948.

R. SAUNDBY,
Air-Marshal (retired).

UNIFORMS OF THE ARMY

THE " FLASH "

To the Editor of the R.U.S.I. Journal.

SIR,—During the Discussion after the Revd. Sumner's lecture on Uniforms of the Army a question was asked about the origin of the term " Flash." I have tried for many years to trace when this was first used by Authority as the name for a protection of the coat collar from pomatum and powder by both soldiers and civilians wearing " clubed " and " queued " hair or wig.

Smith's *Military Dictionary*, published in 1779, does not mention "Flash." But I think there can be no doubt that it was originally a slang term for a certain type of wig. Bailey's, *Canting Words* 1760, gives "Flash, a Peruke; Rum Flash, a long, full high-priz'd Wig; Queer Flash, a sorry, weather-beaten Wig."

Some writers have suggested that the Flash worn by the Royal Welch Fusiliers is the survival of the bow which fastened the wig or queue. I do not agree with the idea. It was undoubtedly the protection of the coat from the grease of the wig or hair, just as was the "wig-bag," which is to be seen to this day worn on the back of the collar of the Lord Mayor's Coachman: this was of special pattern and is also seen on the old style velvet Court Dress of the present day, but the Lord Chamberlain's description of it is named the "Flash."

The present use of the term "Flash" given to the Distinction Badges of Divisions, Brigades, etc., is a misuse of the term and has no historical connection with the "Flash" in any way.

H. OAKES-JONES.

26th *November*, 1947.

WALKING-OUT DRESS

To the Editor of the R.U.S.I. Journal.

SIR,—The Discussion after the recent lecture on "Uniforms of the Army" was confined to historical aspects of the subject and the question of future uniforms was not touched on, yet this is as important to the well-being of the soldier and standard of recruiting as ever it was.

It is clear that, in present circumstances at any rate, the revival of the full glories of military uniforms is not a practical proposition; but the adoption of a really satisfying Walking-Out Dress is a matter of some moment.

This, one knows, has been much discussed since the late war, both officially by those concerned in devising it, and aesthetically by those to whom the traditions of the Army and the Regiment mean much. So far as one may judge, the prevailing idea of a blue uniform—one pattern of which was tried out at the Coronation—would not be popular. No one wants the soldier to be confused with that worthy, but scarcely inspiring body of men—the Government office messengers.

The revival of the red coat seems to be ruled out for practical and economic reasons, indeed it may be asked whether it does not belong to a period long since past when, if it was not the battle dress, it was at least the battle colour. Since then the Army has fought and won the greatest wars in our history in khaki, and for more than a quarter of a Century that has been just as much the traditional colour for the soldier's uniform as dark blue is for the sailor's, or light blue for the airman's.

It may be objected that for a Walking Out Dress—especially if it is to help recruiting—khaki is too drab in its general effect. But why not combine something of the colourful past with the utilitarian present by making general in the Army the existing practice of certain Scottish regiments, the "Cherry Pickers" (11th Hussars), and the "Skins" (5th Royal Inniskilling Dragoon Guards)? Keep the khaki jacket (but let it be of fine cloth with a roll-back collar, khaki shirt and tie) but give the soldier a smart pair of dark blue trousers with the traditional broad or narrow red stripes or stripes of the colour of the regimental facings. Belt, clasps, buttons and perhaps shoulder flashes would give the necessary regimental or corps distinction. Finally a beret with a good-sized metal badge would complete a turn-out that any man might be proud to wear.

OBSERVER.

(Brief letters on this subject will be welcome.—EDITOR.)

BOMBING AND STRATEGY

To the Editor of the R.U.S.I. Journal.

SIR,—I have just read *Bombing and Strategy—The Fallacy of Total War*, by Admiral Sir Gerald Dickens.[1] In his preface, he says " the expression of a point of view must inevitably carry with it criticisms of opinions differing from it." No doubt he would be the first to agree that such criticisms in turn invite comment.

There is much in the book which calls for comment, but considerations of space rule out a great deal that might be said. Some of the statements quoted as facts, however, raise immediate queries in the mind of a reader who has been in touch with the subject, and attention should be drawn to them in order that the arguments which flow from them may be correctly evaluated.

For instance, on page 58, it is stated " things at once began to improve " in the war at sea when " as a result of the Casablanca Conference in January, 1942, Coastal Command was placed under the operational direction of the Naval Staff and the destruction of U-boats by British and U.S. Ships and Air Forces was made a first charge on their resources." It should be noted that (*a*) The Casablanca Conference took place in January, 1943, while (*b*) Coastal Command passed under the operational control of the Admiralty in 1941.

Again, on page 59, it is stated that in March, 1942, there were 412 U-boats " actually at sea." Records show that in that month the whole of the U-boat fleet only amounted to 288, of which less than half were operational and only forty-seven were at sea in the Atlantic. At the peak of the U-boat war a year later, only just over a hundred were at sea in the Atlantic. It is stated on page 33, that in the Battle of the Atlantic " nearly half " the U-boats sunk were sunk by aircraft. In fact, of the U-boats in commission lost from known causes (and excluding accidents) approximately four-sevenths were destroyed by aircraft including air laid mines. Aircraft lent by Bomber Command in May, 1942 (page 58), were not fitted with Leigh Lights and, while they gave yeoman and very welcome service, the effect of their attachment to Coastal Command was scarcely such as is inferred in the relevant paragraph.

These few examples will, perhaps, suffice to indicate that at least some of the statements made are open to question and merit careful consideration.

G. B. A. BAKER,
Air Vice-Marshal,
Royal Air Force (Retired).

31*st January*, 1948.

[1] This book was reviewed in the JOURNAL of November, 1947.—EDITOR.

GENERAL SERVICE NOTES

IMPERIAL DEFENCE COLLEGE

NEW COURSE.—The following officers have been selected for the 1948 Course at the Imperial Defence College :

Royal Navy.—Captain P. G. L. Cazalet, D.S.O., D.S.C., Captain J. W. M. Eaton, D.S.O., D.S.C., Captain E. M. Evans-Lombe, C.B., Captain T. J. N. Hilken, D.S.O., Captain A. R. Pedder, Captain R. W. Ravenhill, C.B.E., D.S.C., Captain A. K. Scott-Moncrieff, D.S.O., Captain (S) J. Dent, O.B.E.

Army.—Brigadier W. H. Lambert, C.B.E., Brigadier G. W. Lathbury, D.S.O., M.B.E., Brigadier A. T. de Rhe Philipe, C.B., O.B.E., Brigadier R. W. Jelf, O.B.E., Brigadier C. B. Fairbanks, C.B.E., Brigadier J. B. Churcher, D.S.O., Brigadier Lord Tryon, D.S.O., Brigadier J. G. Cowley, C.B.E., A.M., Brigadier C. E. H. Dolphin, Brigadier J. H. N. Poett, D.S.O., Lieut.-Colonel J. R. Cochrane, C.B.E.

R.A.F.—Air Commodore A. C. H. Sharp, D.S.O., A.F.C., Air Commodore D. MacFadyen, C.B.E., Air Commodore T. N. McEvoy, C.B.E., Air Commodore N. S. Allinson, C.B., Air Commodore A. D. Gillmore, C.B.E., Air Commodore J. G. W. Weston, O.B.E., Air Commodore A. J. W. Geddes, C.B.E., D.S.O., Air Commodore H. D. Jackman, C.B., C.B.E.

New Zealand.—Brigadier W. G. Gentry, Group Captain M. F. Calder, C.B.E., Ll.B.

Canada.—Brigadier S. F. Clark, C.B.E., Air Vice-Marshal H. L. Campbell, C.B.E., Air Commodore E. M. Smith, C.B.E.

Australia.—Captain D. H. Harries, R.A. Navy, Colonel (Brigadier) E. W. Woodward, D.S.O., O.B.E., Colonel R. E. Wade, O.B.E., Group Captain A. M. Murdoch, C.B.E.

South Africa.—Brigadier S. F. Joubert, D.S.O.

Civil Servants.—R. M. J. Harris (Commonwealth Relations Office), G. V. Hole (Ministry of Transport), S. D. Sargent (Post Office), R. H. Scott (Foreign Office), J. R. McK. Willis, C.M.G. (Inland Revenue), F. B. Gillie (Town and Country Planning), A. H. Mumford, O.B.E. (Post Office), H. S. Young (Ministry of Supply), D. R. Holmes (Colonial Service), A. H. P. Humphrey (Colonial Service), H. McL. McDowell (Colonial Service).

BERTRAND STEWART PRIZE ESSAY COMPETITION

The subject which has been set for the Prize Essay for 1948 is the following :—

" It was in the Middle East that Napoleon, Kaiser William II, and Hitler all staged major offensives to bring about our defeat. It was in, or from, Egypt that Napoleon received his first major defeat, and our enemies in World War I and II sustained their early land defeats in the sequence of our victories that led to their final overthrow.

" Hitherto both we and our enemies have realized the vital importance of control of the Middle East in war. In the light of present and probable political and scientific developments, discuss the future strategic importance of the Middle East to the British Commonwealth of Nations."

The competition is open to all who are serving, or have served, in the Forces of the British Commonwealth or Empire.

Entries must not exceed 10,000 words in length, and must be typewritten and submitted in quadruplicate to the Editor of the *Army Quarterly*, Little New Street, London, E.C.4, by 24th June, 1948.

The authorship of the essays must be strictly anonymous. Each competitor must adopt a motto and enclose with his essay a sealed envelope with his motto typewritten on the outside and his name and address inside.

The title and page of any published or unpublished work, to which reference is made in any essay or from which extracts are taken, must be quoted.

Judges are appointed from the three Services and their decision will be final. They will announce the result of the competition in October, 1948, and the winning essay will be published in *Army Quarterly*.

The prize for 1948 will be £80 and the judges are empowered to distribute it or withhold it altogether according to the standard of the entries submitted.

BRITISH CEMETERIES IN INDIA AND PAKISTAN

With effect from 1st April, 1948, the High Commissioners for the United Kingdom in India and Pakistan have accepted, on behalf of His Majesty's Government, the responsibility for the future maintenance of those British cemeteries in India and Pakistan which until the passing of the Indian Independence Act were maintained by the Government of India. The Governments of India and Pakistan have made the necessary provision for their upkeep until 1st April, 1948.

His Majesty's Government have sanctioned the provision of a small temporary staff in the Offices of the High Commissioners for India and Pakistan for the purpose of organizing the system under which these British cemeteries shall in future be maintained. Large problems are involved and time is short, but it is hoped that before long it will be possible to make a further announcement on the subject.

It is emphasized that His Majesty's Government have not accepted any responsibility in respect of cemeteries which before 15th August, 1947 were *not* maintained by the Central Government. Thus a Christian cemetery belonging to a Mission will continue to be the Mission's responsibility and a private family burial-ground will remain the concern of the family.

CANADA

NATIONAL DEFENCE COLLEGE.—The new National Defence College at Kingston, Ontario, was opened by Mr. Claxton, Minister of National Defence, on 5th January, 1948. Its first Commandant is Major-General Whiteley, of the British Army. As mentioned in the issue of this Journal of last November, the college is comparable to the Imperial Defence College in England.

INDIA AND PAKISTAN

DISSOLUTION OF SUPREME HEADQUARTERS.—At the end of November, 1947, Field-Marshal Auchinleck left India because of " the absence of a spirit of good will and co-operation between the two Dominions " and his Supreme Headquarters were dissolved. The Joint Defence Council, however, decided to continue in existence.

RE-EMPLOYMENT OF BRITISH OFFICERS.—On 1st October, 1947, the Supreme Commander, Field-Marshal Sir Claude Auchinleck, on the instructions of the Joint Defence Council, acting on behalf of the Governments of India and Pakistan, issued to all British officers and other ranks serving with the Armed Forces of India and Pakistan, and to those serving on the Supreme Headquarters Staff, three months notice of the termination of their contracts. The three months began to run on 1st October, 1947.

The Governments of India and Pakistan were then asked if they had come to any decision as to whether they would need the services of any British officers and other ranks after 31st December, 1947, and, if so, to submit for the agreement of His Majesty's Government in the United Kingdom the terms of employment which they proposed. These terms were then to be published and officers and other ranks invited to volunteer.

The terms proposed by the Governments of India and Pakistan, and with some revision agreed to by H.M. Government in November last, were in both cases much the same as those in which personnel in India have been serving since 15th August, 1947. In each case H.M. Government retain the right to withdraw all British volunteers if at any time such action appears to be necessary.

INDIAN REQUIREMENTS.—Sardar Baldev Singh, the Indian Defence Minister, announced on 23rd December that after 1st January, 1948, fewer than 300 British officers will be employed in the Indian Army, mainly as advisers, staff officers, instructors, and commandants of certain training and technical units. Sardar Baldev Singh also announced that 60 Commissioned and 70 Warrant British officers would be needed next year to modernize and develop the Royal Indian Navy and 13 British officers would be required by the Royal Indian Air Force.

PAKISTAN REQUIREMENTS.—On 1st January, addressing a Press conference in Karachi, Liaqat Ali Khan—Prime Minister and Defence Minister, said :

" With regard to the Army, it is essential in order to maintain high standards of efficiency that a certain number of British officers be retained. The British officers required are mostly in specialist and technical arms. The speediest possible action is being taken to train Pakistan officers to enable them to become proficient and then take over from British officers, who will be released as soon as their places can be filled."

The Prime Minister stated that of a total of 3,374 officers in the Army, 2,790 are Pakistani and 584 British. Out of British officers serving either in India or Pakistan 673 volunteered to serve in Pakistan. Of this total only 355 had been selected. The selections were made by Pakistani officers. Efforts were being made to secure the services of 229 British officers still required.

On August 14th, there were 12 British and no Pakistani Major-Generals. Now there were five Pakistani and six British.

In the Navy, said the Prime Minister, they were asking for only 27 British officers, either very senior or special technical officers. Out of 320 Commissioned and Warrant officers 174 were Pakistanis, and reserve officers were being asked to return.

In the Air Force there were 232 Pakistani officers and 27 British. For some time to come they would have to rely on the services of British officers on the technical side. " The Government is confident," concluded the Prime Minister, " that British officers who have volunteered to serve in the Pakistan armed forces will do so with zeal and energy and will do their best to train Pakistan officers."

C.-IN-C., INDIA.—On 1st January, 1948, General Sir Rob Lockhart retired from his post of Commander-in-Chief of the Army of India. He is succeeded by Lieut.-General F. R. R. Bucher, who will hold the appointment for three months and then be succeeded by an Indian officer. General Bucher, however, will continue to serve as chief adviser.

NAVY NOTES

GREAT BRITAIN

H.M. The King

The King and Queen visited the Royal Naval College at Dartmouth on 30th October. At Kingswear they were received by Captain P. B. R. W. William-Powlett, Captain of the College, and crossed the river in a naval barge with escort to Dartmouth pontoon, where they were received by the Mayor and Corporation of Dartmouth. His Majesty inspected the Cadets at Divisions and spoke to several, some of whose fathers were Cadets with him at the College in 1911-12.

Captain R. K. Spencer, V.D., has been appointed Royal Naval Volunteer Reserve Aide-de-Camp to the King, from 1st November, 1947, in place of Captain C. A. R. Shillington, V.D.

Captain R. G. Thelwell, O.B.E., R.D., has been appointed a Royal Naval Reserve Aide-de-Camp to the King, from 9th December, 1947, in place of Captain R. E. T. Tunbridge, D.S.C., R.D., placed on the Retired List.

It was announced on 20th December that the King had appointed Lieutenant-Commander George Gosselin Marten, R.N., to be an Equerry to His Majesty. He succeeds Lieutenant-Commander P. W. B. Ashmore, R.N., who has been been released to resume his general naval duties, and has been appointed an Extra Equerry to His Majesty.

The Duke of Edinburgh

On the eve of the marriage of Princess Elizabeth to Lieutenant Philip Mountbatten, R.N., in Westminster Abbey on 20th November, the following announcement was issued from Buckingham Palace :—

> " The King to-day conferred the honour of knighthood on Lieutenant Philip Mountbatten, R.N., and invested him with the insignia of a Knight Companion of the Most Noble Order of the Garter.
>
> " His Majesty has been pleased to authorise the use of the prefix His Royal Highness by Lieutenant Philip Mountbatten, R.N., and to approve that the dignity of a dukedom of the United Kingdom be conferred upon him by the name, style, and title of Baron Greenwich, of Greenwich in the County of London, Earl of Merioneth and Duke of Edinburgh."

The Duke of Edinburgh was on 4th December appointed to the Admiralty for duty in the Operations Division of the Naval Staff, to date 15th December.

Princess Elizabeth and the Duke of Edinburgh have appointed Lieutenant John M. A. Parker, R.N. (Retired), to be Equerry to their Royal Highnesses.

Honorary Chaplain to the King

The Reverend L. Coulshaw, M.C., A.K.C., R.N., Chaplain of the Fleet, has been appointed Honorary Chaplain to His Majesty the King, to date 1st January, 1948.

Flag Appointments

The King has approved the appointment of Rear-Admiral H. A. Packer as a Lord Commissioner of the Admiralty and Chief of Supplies and Transport, in succession to Vice-Admiral Sir Douglas B. Fisher, from 29th March, 1948.

The appointment has been approved of Rear-Admiral the Hon. Guy H. E. Russell as Flag Officer Commanding the Second Cruiser Squadron, in succession to Rear-Admiral H. A. Packer, from 21st January, 1948.

On 14th November the appointment was announced of Rear-Admiral L. D. The Mackintosh of Mackintosh as Vice-Controller (Air), Chief of Naval Air Equipment, and Chief Naval Representative at the Ministry of Supply, from January, 1948.

On 23rd December, the Admiralty announced that Captain C. T. M. Pizey, R.N., had been appointed Chief of United Kingdom Services Liaison Staff, Australia, in succession to Rear-Admiral A. R. M. Bridge, to date February, 1948. He is granted the acting rank of Rear-Admiral while holding this appointment.

On 24th December, it was announced that Rear-Admiral D. Young-Jamieson had been appointed Head of the British Naval Mission to Greece in succession to Rear-Admiral A. G. Talbot, with effect from early in January.

Vice-Admiral Sir Thomas Troubridge assumed duty as Flag Officer (Air) and Second-in-Command, Mediterranean Station, on 7th January, succeeding Vice-Admiral Sir Cecil Harcourt, who left for home prior to taking up the post of Second Sea Lord in March.

Admiral Sir Neville Syfret hauled down his flag in H.M.S. " Duke of York " on 7th January at Portsmouth on relinquishing the appointment of Commander-in-Chief, Home Fleet, in which Vice-Admiral Sir Rhoderick McGrigor succeeded him.

The King has approved the appointment of Rear-Admiral P. B. R. W. William-Powlett to be Naval Secretary to the First Lord of the Admiralty in succession to Rear-Admiral M. J. Mansergh, the appointment to take effect on 12th April.

Rear-Admiral H. G. Norman has been appointed Chief of Staff to the Commander-in-Chief, Mediterranean Station, in succession to Rear-Admiral Guy Grantham, the appointment to take effect in March.

Captains' Appointments

The following are among the new appointments announced for Captains, R.N. :—

Captain H. W. Faulkner to succeed Captain P. B. R. W. William-Powlett in command of the Royal Naval College, Dartmouth, from 8th January, 1948.

Captain T. V. Briggs to be Deputy-Director of Naval Ordnance, Admiralty, in succession to Captain H. N. S. Brown.

Captain C. T. Jellicoe to be Captain-Superintendent and Captain-in-Charge, Sheerness, in succession to Captain G. C. P. Menzies, from 5th November, 1947.

Captain W. T. Couchman to be Director of Air Organization and Training, Admiralty, in succession to Captain K. S. Colquhoun, from 22nd December, 1947.

Captain C. D. Howard-Johnston has been appointed Naval Attaché, Paris, in succession to Rear-Admiral Richard Shelley.

Captain Sidney Boucher to be Director of Physical Training and Sports, and in command of the P.R.T. School, Portsmouth.

Captain H. P. Henderson to be Senior Officer, Reserve Fleet, Portsmouth, in succession to Captain S. Boucher.

Captain I. M. R. Campbell to be Naval Assistant to the Admiral Commanding Reserves in succession to Captain D. Hammersley-Johnson, from 24th January.

Captain W. W. Davis to be Chief of Staff to the Commander-in-Chief, Home Fleet, in succession to Rear-Admiral E. W. L. Longley-Cook, with rank of Commodore First Class, from 11th February, 1948.

Promotions and Retirements

The Admiralty announced on 20th January that the King has approved the promotion of Admiral Sir John H. D. Cunningham, First Sea Lord, to be Admiral of the Fleet, to date 21st January, 1948.

The following promotions and retirements were also announced :—

Vice-Admiral Sir Denis W. Boyd to be Admiral, to date 21st January, 1948.

Rear-Admiral C. H. L. Woodhouse to be Vice-Admiral, to date 21st January, 1948.

Rear-Admiral Richard Shelley is placed on the Retired List and promoted to Vice-Admiral (Retired), to date 21st January, 1948.

The following retirements and promotions were announced by the Admiralty on 4th January :—

Admiral Sir Henry D. Pridham-Wippell is placed on the Retired List at his own request in order to facilitate the promotion of junior officers. The retirement was to take effect on 4th February.

Vice-Admiral Sir Geoffrey J. A. Miles is promoted to Admiral in H.M. Fleet from 4th January.

Vice-Admiral Sir Frederick H. G. Dalrymple-Hamilton is promoted to Admiral from 4th January.

Vice-Admiral Sir Charles E. Morgan is placed on the Retired List at his own request in order to facilitate the promotion of junior officers. The retirement was to take effect on 11th January.

Rear-Admiral R. S. G. Nicholson, Rear-Admiral G. E. Creasy and Rear-Admiral W. E. Parry are all promoted to Vice-Admiral from 4th January.

Rear-Admiral A. G. Talbot and Rear-Admiral H. J. Egerton are placed on the Retired List and promoted to Vice-Admiral from 4th January.

The following was announced on 18th November, 1947 :—

Rear-Admiral L. H. Ashmore to be placed on the Retired List, to date 20th November 1947.

The following appeared in the *London Gazette* on 18th November, 1947 :—

Captain (Retired) A. J. L. Phillips to be Rear-Admiral (Retired), 22nd December, 1947.

New Rear-Admirals.—The following officers have been promoted to Rear-Admiral, to date 8th January, 1948 :—

Captain W. G. Andrewes.
Captain W. Y. La R. Beverley.
Captain P. B. R. W. William-Powlett.
Captain C. A. L. Mansergh.
Captain C. P. Clarke.
Captain E. W. L. Longley-Cook.

Captains Retired.—The following officers have been placed on the Retired List, in the rank of Captain, to date 8th January, 1948 :—

Captain J. C. Annesley.
Captain A. F. de Salis.
Captain N. J. W. William-Powlett.
Captain F. S. Bell.
Captain F. S. W. de Winton.
Captain G. C. P. Menzies.
Captain R. M. Ellis.
Captain M. S. Slattery.

Engineer Branch.—The following officers promoted to Rear-Admirals (E), 5th November, 1947 :—

Captain (E) J. Breaks.
Captain (E) R. G. Murray.

Medical Branch.—Surgeon Rear-Admiral A. E. Malone is placed on the Retired List, 14th December, 1947.

Half-Yearly List of Promotions

The following promotions were made to date 31st December, 1947 :—

Commander to Captain.—G. A. F. Norfolk, G. H. Peters, R. C. Medley, A. H. Wallis, K. St. B. Collins, P. L. Saumarez, J. Lee-Barber, W. J. Lamb, W. G. C. Stokes, A. D. H. Jay, B. W. Taylor, E. F. Pizey, G. C. Blundell, D. P. Trentham, T. E. Podger, J. R. B. Longden, R. A. Ewing, W. A. Adair.

Lieutenant-Commander to Commander.—G. W. W. H. Paine, K. L. Elder, G. B. Rowe, E. G. Clutton, J. W. Rylands, H. A. I. Luard, J. B. Laing, M. W. B. Craig Waller, H. Pasley-Tyler, T. K. Jones, A. J. R. White, W. J. R. Campbell, H. R. Rycroft, R. Horncastle, C. K. S. Aylwin, A. R. L. Butler, M. G. Haworth, J. F. R. Crews, E. A. Shaw, J. H. Walwyn, R. F. Wells, R. C. Watkin, R. M. Favell, R. H. C. Wyld, J. T. Kimpton, J. M. D. Gray, G. G. Wilson, P. J. Wyatt, P. J. Hill-Norton, L. G. Wilson, D. R. N. Murdoch, E. A. S. Bailey, P. D. O'Brien, J. R. L. Moore, C. P. Mills.

Commander (E) to Captain (E).—A. F. F. Menzies, F. E. Lefroy, W. T. Hindson, C. M. Morrell, L. A. B. Peile.

Lieutenant-Commander (E) to Commander (E).—R. S. Spooner, H. C. D. Boase, L. K. D. Wood, F. M. Philby, R. R. Lambert, H. J. P. Crousaz, W. R. Stewart, H. J. S. Banks, J. C. U. Hayward, P. L. Cloete, P. D. Lewis, L. H. J. Masters, J. P. Sandbrook, W. T. C. Ridley, W. R. Knocker.

Surgeon-Commander to Surgeon-Captain.—S. G. Weldon, E. B. Pollard, R. G. Anthony.

Surgeon-Commander (D) to Surgeon-Captain (D).—F. R. P. Williams.

Surgeon Lieutenant-Commander (D) to Surgeon-Commander (D).—H. V. Pell, F. J. Goldsworthy, J. C. Benson, W. G. Finnie.

Commander (S) to Captain (S).—J. Dent.

Lieutenant-Commander (S) to Commander (S).—G. H. Stanning, R. L. Kirby, J. E. Stevens, W. R. Michell, C. H. A. Harper, C. K. T. Wheen, J. K. Watkins, S. A. B. Morant, G. S. Mowll, R. S. Flynn, P. R. Read, R. H. Colby, J. E. C. F. O. Stoy, W. H. Heathcote, R. T. Owen.

Lieutenant-Commander (L) to Commander (L).—W. D. F. B. Muspratt, F. J. Emuss, C. H. S. Wise, H. L. Vaughan, H. Boyce, A. J. MacMillan.

Instructor Lieutenant-Commander to Instructor-Commander.—F. L. Westwater, W. P. Lebbon.

Honours and Awards

New Years Honours

The following were included in the New Years Honours conferred by the King :—

G.C.B. (Military).—Admiral Sir Edward Neville Syfret.

K.C.B. (Military).—Lieutenant-General Reginald A. D. Brooks, Royal Marines; Vice-Admiral Charles S. Daniel.

C.B (Military) —Rear-Admiral A. R. M. Bridge, Rear-Admiral H. Hickling, Major-General H. T. Newman, R.M., Surgeon Rear-Admiral J. A. O'Flynn, Rear-Admiral R. D. Oliver, Rear-Admiral the Hon. G. H. E. Russell, Rear-Admiral (E) B. L. G. Sebastian, Rear-Admiral A. G. N. Wyatt.

K.B.E. (Military).—Rear-Admiral (E) John L. Bedale.

C.B.E. (Military).—Acting Rear-Admiral (S) E. S. Apps, Rear-Admiral (E) G. H. H. Brown, Captain R. A. Jackson, R.N. (Retired), Surgeon Captain C. Keating, R.N., Colonel R. A. R. Neville, R.M.

K.C.S.I.—Vice-Admiral Sir Geoffrey J. A. Miles, Commander-in-Chief, Royal Indian Navy.

K.B.E. (Military).—Rear Admiral Arthur R. Rattray, R.I.N., Flag Officer, Bombay.

C.S.I.—Captain (S) R. V. Brockman, R.N., Personal Secretary to H.E. the Viceroy of India.

C.I.E.—Captain H. R. Inigo-Jones, Acting Commodore, 2nd class, Royal Indian Navy.

K.C.V.O.—In the *London Gazette* on 7th November it was announced that the King had been pleased to make the following promotion in the Royal Victorian Order :—

To be K.C.V.O.—Captain (S) Lewis A. Ritchie, C.V.O., C.B.E., R.N. (Retired), to date 5th November, 1947.

PALESTINE SERVICE.—In the *London Gazette* on 25th November there were announced the first naval decorations for gallantry and distinguished service in connection with the interception of illegal immigrant ships in the Mediterranean. They included a Bar to the D.S.C., two D.S.C.'s, six D.C.M.'s, and 22 mentions in despatches. A Bar to the D.S.C. was awarded to Lieutenant R. J. G. McPherson, R.N., who was the senior boarding officer of a party of 40 officers and men who arrested the " President Warfield " on 18th July, 1947, maintained control of the ship and 4,500 people on board, and brought her safely to Haifa under her own power and without accident.

Lieutenant K. P. Shallow, R.N., received the D.S.C. for gallant service as leader of the boarding party in the same incident.

Lieutenant C. M. Stocken, R.N., received the D.S.C. for the display of fearless leadership against hostile immigrants when in charge of a party which boarded the " Four Freedoms " on 2nd September, 1946.

EXERCISES AND CRUISES

SUBMARINES.—Accompanied by the depot-ship " Maidstone " and the destroyer " Opportune," the submarines " Turpin," " Trump," " Tradewind," " Tactician," " Tiptoe," " Taurus," and " Sanguine," from the Second and Fifth Flotillas, left Portland on 3rd November for submarine and anti-submarine exercises, with air co-operation, as far as Holyhead, returning to Portland on 19th November.

SOUTH ATLANTIC.—H.M.S. " Nigeria," flagship of Vice-Admiral Sir Clement Moody, C.-in-C. South Atlantic, was due to visit East London, South Africa, on 10th January, with H.M. sloop " Acteon " in company. The ships were on a three weeks' cruise in the course of which they were due to visit Durban.

WEST INDIES.—Ships of the America and West Indies Squadron left their base at Bermuda on 2nd January for their second winter cruise since the end of the War. Between 3rd February and 24th April they were to co-operate in Spring training exercises with the Royal Canadian Navy, a rendezvous having been fixed at St. John, Antigua.

MISCELLANEOUS MOVEMENTS.—The cruiser " Liverpool "—flagship of Admiral Sir Algernon Willis—left Malta on 20th October for Chatham to pay off after a commission of over two years in the Mediterranean.

The destroyer " Contest " arrived at Portsmouth on 26th December, and the destroyer " Cascade " at Plymouth, from two-year commissions with the British Pacific Fleet. The ships reached home five days late, having been detained at Aden to assist in quelling riots between Jews and Arabs and to check looting, both landing detachments.

PERSONNEL

REDUCTION IN MANPOWER.—A statement on the effect of the proposed reductions in manpower of the Navy (referred to on page 609 of the November JOURNAL) was made by the Minister of Defence, Mr. Alexander, in the House of Commons on 23rd October. It is anticipated that the strength of the Navy at 31st March, 1948, will be 147,000, and it is hoped that it will remain steady at or about that figure throughout the following year. The consequences of this more rapid run-down from the previously planned strength of 178,000 at 31st March, 1948, will, of course, be appreciable. It was, however, after

deliberate consideration of the relative advantages and disadvantages of making the reductions quickly at the expense of temporary dislocation, that the Admiralty advised, and the Government approved, that the reductions should take place by 31st March.

To effect the reductions in naval numbers, if reasonable strength oversea is to be preserved and fairness maintained in releasing men abroad *pari passu* with those at home, the Minister stated, it is necessary to draw trained men from the Home Fleet and other home stations to relieve men on foreign service. This process involves temporary immobilization of a considerable part of the Home Fleet. It is, however, essential that this term "immobilization" should not be misunderstood. With one exception, the ships are being maintained in commission. Some will be kept fully operational; others will be subject to such substantial changes in their ships' companies that they cannot proceed to sea at once. In some instances the period of immobility will be quite short. In others it may be a matter of some months.

In a further statement on 27th October, Mr. Alexander referred to a report that the effective strength of the Home Fleet had been reduced to one cruiser and four destroyers—the "Superb" (flagship of the Second Cruiser Squadron), and the destroyers "Agincourt," "Aisne," "Dunkirk" and "Jutland." He said: "It was quite untrue that this had practically destroyed the Home Fleet. The Fleet, with the exception of one cruiser which would be in reserve, would not be reduced. It would not go out of commission. It might be immobilized in part for a varying time. The complements of ships would be readjusted to have an autumn cruise next year."

The estimated proportion of the Regular and National Service components in the total of 147,000 men on 31st March would be about 114,000 regulars and 22,000 National Service men. The remainder of the force would be W.R.N.S. or locally enlisted personnel. So far as voluntary recruiting was concerned, the figures for the Royal Navy were very satisfactory.

"Axing" to be Avoided.—An Admiralty message received at the home ports on 7th November stated that the Board have every desire to avoid recourse to "axing" measures to reduce the number of officers in the Navy, and, on the numbers planned for next year, they do not contemplate that any measure of this kind will be necessary. Reductions are being obtained by speeding up the release of temporary officers and national service ratings. There is no intention of interfering with the recruiting of men for continuous and special service. The practice of allowing men with satisfactory records to re-engage will also continue.

Submarine Service.—The Flag Officer (Submarines), Vice-Admiral J. M. Mansfield, stated at an Old Comrades Dinner in November that the Submarine Service had not been affected by the reduction to the Navy. Thirty-six submarines were being maintained in commission and twenty-nine in reserve.

Reductions in Establishments.—On 21st October the Admiralty announced that three of the Royal Naval Air stations are to be closed as an economy measure. They are H.M.S. "Kestrel" at Worthy Down, near Winchester; H.M.S. "Goldcrest" at Dale, Haverfordwest, Pembrokeshire; and H.M.S. "Fieldfare" at Evanton, Ross and Cromarty.

On 27th October it was announced at Plymouth that ships comprising the stoker-mechanic training establishment, H.M.S. "Imperieuse," are to reduce to reserve. The training undertaken by these ships will in future be given at a shore establishment, H.M.S. "Raleigh," at Torpoint, and the duties of the "Raleigh" as a young seamen's training base are to be absorbed by naval establishments in other parts of the country. The "Imperieuse" group, training about 1,800 stoker-mechanics, comprised the old battleships "Revenge" and "Resolution."

On 14th November it was announced that the establishment at the Sea Mining School (H.M.S. "Lochinvar") at Port Edgar, on the Firth of Forth, is to be reduced and the mining school transferred to Portsmouth. The Captain of the "Lochinvar" explained

that all mine-sweeping operations off the British coasts had now come to an end, and as a result of this and the economy cuts all the records of the minesweepers were being transferred to Portsmouth.

Training in H.M.S. " Scotia," the naval communications training establishment at Lowton St. Mary, Warrington, ended on 20th December, and the school was ordered to be closed early in the New Year. About 700 men and 120 Wrens under training were to be absorbed into the signal training establishments at Portsmouth and Chatham.

H.M.S. " St. George," training establishment at Gosport, was closed on 23rd December. New entrants will now go to H.M.S. " Raleigh," at Devonport, and other establishments. The " St. George " was housed in barracks taken over by the Admiralty in 1940 and formerly occupied by the Army. They will now go back to the War Office.

STENOGRAPHER BRANCH.—The establishment of a Stenographer Branch in the Navy was announced in a Fleet Order of 12th December, 1947. They will be entered on a Special Service engagement for five years active service and seven years in the Royal Fleet Reserve.

MATERIAL

H.M.S. " KENT."—The 10,000-ton cruiser " Kent " left Chatham in tow, last December, en route to the Clyde, where she will eventually be broken up.

Launched in 1926 and commissioned two years later by Captain J. Wolfe Murray, she started her career as flagship of the C.-in-C., China Station. During the War, she took part in the unfortunate attack on Dakar in September, 1940. More notable was the exploit when she led the squadron which destroyed ten out of eleven enemy vessels in convoy off Norway on 12th November, 1944.

WEAPONS CLASS DESTROYER.—H.M.S. " Crossbow " was completed at the Woolston Yard of Messrs. Thornycroft in December and has joined the new Home Fleet flotilla, the other ships of which are the " Battleaxe " (Leader), " Scorpion," and " Broadsword."

H.M.S. " DIADEM."—Having completed trials and done a short shake-down cruise, the new cruiser " Diadem," of the improved " Dido " class, has joined the Home Fleet units immobilized at Portsmouth during the existing manning difficulties.

SHIP TARGET TRIALS.—As part of the Admiralty's comprehensive series of Ship Target Trials a programme of research has been in progress in Loch Striven with the object of discovering the effects on ship structures of explosive charges detonated at various distances from the hull, conditions simulating " near misses." One cruiser, three destroyers, and an ex-German destroyer are being used for the trials in addition to certain smaller ships.

The object is to study the effects of various weapons, including bombs, torpedoes and mines upon ship structures. In certain of the trials which have already taken place in the Portsmouth area, ships were subjected to direct hits.

ADMIRALTY RESEARCH ESTABLISHMENT

On New Year's day, the largest Admiralty research establishment, until then known as the Admiralty Signal Establishment, changed its name to the Admiralty Signal and Radar Establishment.

Its activities now include all aspects of electronics as they bear on naval communication, aviation and weapons of diverse types.

WOMEN'S ROYAL NAVAL SERVICE

The Duchess of Kent, Commandant of the Women's Royal Naval Service, inspected personnel of the Service at the R.N. Air Station, Lee-on-Solent, on 4th December. It was her first visit to the station, and she had luncheon with Vice-Admiral R. H. Portal, Flag Officer (Air), and Mrs. Portal. In the afternoon the Duchess opened the Queen Anne Residential Club for elderly people at Southsea.

INCREASE OF W.R.N.S.—Commanding Officers of the Home Fort establishments have been called upon to report on the accommodation and employment of an extra thousand Wrens to include the categories—cook, steward, writer, stores assistant, motor transport driver, and possibly communications. The intention is that they should be substituted for male naval ratings.

WOMEN'S ROYAL NAVAL RESERVE.—The Admiralty has decided to form for the first time a Women's Royal Naval Reserve, which will be known by the initials W.R.N.R. The decision, announced in a Fleet Order on 13th November, will mean that thousands of war-time W.R.N.S. officers and ratings, now demobilized, may renew their association with the Navy. The Reserve will be open to women with a satisfactory record of more than 12 months service who are prepared to be called up in the event of future emergency. There will be no compulsory training, but it is under consideration to arrange voluntary training for certain categories.

ROYAL MARINES

PROMOTION.—The Admiralty announce the following promotion :—

Lieutenant-General R. A. D. Brooks, Royal Marines, to be General, Royal Marines, to date 8th January. On his promotion, General Brooks is reappointed as Commandant-General, Royal Marines.

R.M. ASSOCIATION.—Major-General R. H. Campbell has been elected President of the Royal Marines Association. He retired, after 34 years in the Royal Marines, in 1946. Since the Association was formed two years ago, nearly 40,000 members have joined, 135 branches have been opened, and 15,000 employment, advice, and welfare problems have been answered.

NEW VOLUNTEER RESERVE.—It was announced in a Fleet Order on 12th December that it is intended to establish a Volunteer Reserve of the Royal Marines. It will be a counterpart of the R.N.V.R., and will be the first Volunteer Reserve to be established by the Marines. Members of the Reserve will perform both part-time training at week-ends and full-time training in H.M. ships or establishments. Expenses, allowances and bounties will be paid at the same rates as to members of the R.N.V.R. and the T.A. Pay and allowances will be made during full-time training. Details may be obtained from the Commandant-General, Royal Marines (R.M.F.V.R.), Queen Anne's Mansions, S.W.1.

HALF-YEARLY PROMOTION LIST.—The following promotions have been made to date 31st December, 1947 :—

Lieutenant-Colonel to Colonel.—J. T. Hall, B. W. Leicester.

Major to Lieutenant-Colonel.—W. S. North, G. A. Haward.

Captain to Major.—G. P. D. Pease, P. H. C. Teek, H. G. Hasler, O. Patch, H. F. S. Bowen, J. Richards, P. R. Matters, N. H. Tailyour, C. D. L. Aylwin, M. G. Y. Dobson.

DOMINIONS AND COLONIES

AUSTRALIA

EXPANSION PLAN.—The Minister for the Navy, Mr. Riordan, stated at Canberra on 21st October, that any reduction in British naval strength in the Pacific would increase Australian naval responsibilities correspondingly. By 1952, at the end of the present five-year expansion plan, Australia would have the greatest peace-time Navy in her history, with 26 ships in commission and a reserve of 80 vessels. At the end of the same period naval man-power would be two-and-a-half times the number it was before the War, with a strength of 14,753 men. Vessels in commission in 1952 would include two light fleet carriers obtained from Britain, two cruisers, six destroyers, and 16 other vessels, including frigates, surveying ships, mine-sweepers and boom defence vessels, while reserve vessels would include a cruiser and miscellaneous craft.

FIRST NAVAL MEMBER.—It was announced at Canberra on 12th January that the Commonwealth Cabinet has appointed Rear-Admiral J. A. Collins as First Naval Member of the Australian Naval Board, in succession to Admiral Sir Louis Hamilton. Rear-Admiral Collins, who had just completed a course at the Imperial Defence College, is the first officer of the Royal Australian Navy to occupy this post. In 1940 he commanded the cruiser " Sydney " when she engaged and sank the Italian cruiser " Bartolomeo Colleoni " in the Mediterranean.

LIAISON WITH U.S. NAVY.—It was stated by Mr. Chifley, the Prime Minister, on 9th January, that senior officers will undergo " unofficial " instruction on board ships of an American task force. Six R.A.N. officers would fly to Pearl Harbour to join the U.S.S. " Valley Forge " for a voyage to Sydney. Mr. Chifley said that this was in continuation of the very close liaison which existed between the R.A.N. and the United States Navy during the War. The officers would be able to watch the American task force in operations during the passage.

ANTARCTIC RESEARCH.—The first unit of the Australian Antarctic Expedition left Melbourne on 17th November on board a landing ship of the Australian Navy, L.S.T. 3501, specially fitted for Antarctic operations. Its destination was Heard Island, about 2,500 miles South-West of Fremantle, and midway between there and South Africa, where a party of 14 scientists was to establish a meteorological research station and a Commonwealth post office. On 4th January, information was received that eighteen days of calm weather had enabled the party to land all heavy stores.

On 13th December, H.M.A.S. " Wyatt Earp," a small ship fitted with a 480 h.p. Diesel engine, and carrying a complement of 24, including four scientists, naval and air force officers and ratings, left Adelaide for Melbourne and Hobart, whence she was due to leave for Commonwealth Bay, Adélie Land, to undertake the first reconnaissance of the Australian sector of the Antarctic continent.

CANADA

KING'S DIRK.—His Majesty has approved the award of the King's Canadian Dirk to the best all-round Naval Cadet graduating from H.M.C.S. " Royal Roads," the Naval College at Esquimalt, B.C.

NEW AIRCRAFT-CARRIER.—The Minister of National Defence, Mr. Brooke Claxton, announced at Ottawa on 23rd December that the aircraft-carrier " Warrior," hitherto operating under Canadian authority, is being placed in reserve in Britain, and her place will be taken by her sister carrier " Magnificent," which is nearing completion at Belfast, and is expected to arrive in Canada next June.

SPRING EXERCISE CRUISE.—During the Spring exercise cruise of the Royal Canadian Navy in February and March, opportunity will be taken to collaborate with ships of the British America and West Indies Squadron under Vice-Admiral Sir William Tennant. After taking Cadets from the Royal Canadian Naval and Air Force College to sea for a cruise, from which they will return to Esquimalt in the frigate " Antigonish," the cruiser " Ontario " and destroyer " Crescent " will go South to the Panama Canal, where they will be joined by the tribal class destroyer " Nootka " from Halifax before combining with the British squadron. The Canadian mine-swepeer " New Liskeard " will also exercise in the same area before the Canadian ships return to their respective bases at Esquimalt and Halifax. In the same period, the new Halifax-built tribal class destroyer " Cayuga " will go from Halifax to Esquimalt, which will be her future base. Opportunity will be taken to train officers and ratings of the Royal Canadian Naval Reserve.

SOUTH AFRICA

ISLANDS OCCUPIED.—The South African frigate " Transvaal " left Capetown on 21st December to occupy the twin islands of Marion and Prince Edward, about 1,200 miles off the southern coast of the Union. The right of occupation was granted by the British Government, according to an official statement issued at Johannesburg on 4th January.

Prince Edward Island was occupied on Christmas Eve, and Marion Island on 30th December. The Union Government will establish a meteorological outpost in each island, forming part of a chain of stations in the southern seas.

INDIA AND PAKISTAN

FIRST NAVAL VISITS.—The Commander-in-Chief, East Indies, Admiral Sir Arthur Palliser, flying his flag in the cruiser "Norfolk," Captain G. A. French, R.N., arrived at Bombay on 15th December and at Karachi on 29th December on visits to the Governors-General of India and Pakistan, the first of such naval visits since these Dominions came into existence. The "Norfolk" was at Bombay for Christmas and at Karachi for the New Year.

H.M.S. "ACHILLES."—The cruiser "Achilles," which took part in the Battle of the River Plate in December, 1939, in which the "Admiral Graf Spee" was sunk, and which is to be bought from Great Britain by India, is expected to reach Indian waters in the Autumn of 1948.

EAST AFRICA

PROPOSED NAVAL FORCE.—At a conference at Nairobi in October between the Governors of Kenya and Tanganyika, the Acting Governor of Uganda, and the British Resident at Zanzibar, advantage was taken of the presence of the Commander-in-Chief, East Indies, the G.O.C.-in-C., East Africa, and the A.O.C., East Africa, to discuss defence and internal security. Preliminary consideration was given to the establishment of a regular full-time East African Naval Force to supersede the present East African R.N. Volunteer Reserve. The new force will be controlled and administered by the East African Governments, and come under the Commander-in-Chief, East Indies, for training. Legislation on the proposal will come before the East African Central Assembly to be established next year.

FOREIGN NAVIES

NETHERLANDS

DUTCH NAVY.—The majority of the ships of the Dutch Navy are in the East Indies, under the command of a Vice-Admiral. Those in home waters are commanded by a Captain, and are chiefly employed in training.

The principal units are :—

1 Carrier-escort, the "Karel-Doorman" (ex-H.M.S. "Nairana").
2 Light cruisers of 4,150 tons, the "Tromp" and "Jacob-Van-Heemskerck."
6 Destroyers of 1,800 tons, bought from Britain.
8 Submarines; 3 bought from Britain, the remainder obsolete and used only for training.
6 Escort vessels, including one ex-British frigate.
Also a number of Coastal Force craft, minesweepers, and auxiliaries.

Two 8,350-ton cruisers, which were building when the country was overrun, were found intact on liberation. The Germans had continued their construction and one had been launched by them in 1944. They are being completed but their armament is being changed so as to equip them as anti-aircraft cruisers.

A projected, ten-year programme aims at providing three "Task Forces," each to consist of a light aircraft carrier, two anti-aircraft cruisers, eight destroyers, and auxiliaries; also a reserve consisting of a fourth carrier, two cruisers, and twelve destroyers. It seems unlikely, however, that this programme will materialize in the specified time even with the assistance of ships purchased abroad.

NORWAY

BREAKING UP THE "TIRPITZ."—Salvage operations were started in October last on the German battleship "Tirpitz," sunk off Tromsoe in 1944 by British bombers. It is expected that these will yield at least 10,000 tons of scrap for Norwegian works and shipyards.

The bodies of the German crew found in the ship are being handed over to the Norwegian Navy for burial.

RUSSIA

TRANSFER OF GERMAN U-BOAT PLANT.—According to an American report, German U-boat plant is being transferred wholesale to Russia. Assembly yards and engine-manufacturing establishments at Peenemunde on the Baltic have been dismantled and transhipped. Some 4,000 submarine technicians and construction supervisors have also been sent to the Soviet Union.

UNITED STATES

SCIENTIFIC RESEARCH.—A report issued by the U.S. Scientific Research Board, last Autumn, stated that the American Government is spending hundreds of millions in preparation for possible war in the upper atmosphere, involving supersonic speed and conditions of Arctic cold. During the fiscal year ending 30th June, 1948, research expenditure includes the following allocations: Navy $262,000,000; Army and Air Force $237,000,000; Maritime Commission $87,000.

The Navy is investigating the possibliities of driving ships by atomic energy.

The report also refers to a design for a 3 in. twin gun-mounting with radar control, which will automatically pick up an enemy aircraft or missile, compute fire-control settings, and open fire at the effective range. "The speeds of contemplated missiles," it is stated, "will be such that there will be no time for many human operations. Human reactions will have to be eliminated by making most of the processes completely automatic."

CARRIER-FIRED V-2 ROCKET.—The *United States Naval Institute Proceedings* for December last publishes a photograph of a V-2 type rocket being fired from the aircraft carrier "Midway" at sea, and another showing these weapons lined up on the flying deck.

MEDITERRANEAN FLEET.—Admiral Bieri, commanding the U.S. Mediterranean Fleet, stated in a Press interview last Autumn that the Fleet was remaining in that sea indefinitely. Its probable bases were Naples and Palermo. The strength at that time was one aircraft carrier, five cruisers, seven destroyers and twelve auxiliary vessels. The carrier had a complement of 150 aircraft.

SPECIAL MEDAL FOR ADMIRAL KING.—A special gold medal, authorised by Congress in 1946 to be awarded to Fleet Admiral Ernest J. King for his distinguished leadership of the Navy during the late war, was presented to him in hospital by Fleet Admiral Leahy, representing the President.

CRUISER CANCELLED.—The completion of the fourth 17,000 ton cruiser of the "Des Moines" class, which was to have been named the "Dallas," has been cancelled. This ship was laid down by the Bethlehem Steel Co. at Quincy in 1945. One of the other ships was launched in 1946, and two more in 1947.

SALE OF BATTLESHIPS.—The old battleships "Idaho" and "New Mexico" have been placed on the sale list. They were completed in 1918-19, but extensively modernized in 1934-36. Both sustained damage in action during the late war.

The battleship "Oklahoma," sold for scrapping in 1946, only fetched $46,127.

NAVAL RESERVE.—On 1st September, 1945, the Naval Reserve had reached 277,808 officers and 578,875 enlisted men, representing 73 per cent. of the planned Reserve strength.

ARMY NOTES

GREAT BRITAIN

H.M. The King

The King has been pleased to approve the appointment of H.M. King Frederik IX of Denmark to be Colonel-in-Chief of The Buffs (The Royal East Kent Regiment) (23rd December, 1947).

The Duke of Gloucester, as Colonel of the Regiment, inspected the 1st Battalion, Scots Guards, at Pirbright, on 25th November, 1947.

The King has approved the following appointments :—

To be Aide-de-Camp General to the King.—General Sir A. F. Philip Christison, K.B.E., C.B., D.S.O., M.C. (10th August, 1947).

To be Aides-de-Camp to the King.—Colonel (temporary Brigadier) H. M. Hinde, C.B.E. (18th July, 1947); Colonel (temporary Brigadier) T. H. Massy-Beresford, D.S.O., M.C. (28th October, 1947).

To be Hon. Surgeon to the King.—Major-General R. W. Galloway, C.B., C.B.E., D.S.O., M.B. (9th September, 1947).

To be Colonels Commandant.—Of the Royal Artillery, Lieut.-General Sir G. Ivor Thomas, K.B.E., C.B., D.S.O., M.C., and Major-General G. C. Kemp, C.B., M.C. (both dated 1st January 1948); of the Royal Army Medical Corps, Major-General R. E. Barnsley, C.B., M.C., M.B. (1st January, 1948).

To be Colonels of Regiments.—Of the 8th King's Own Royal Irish Hussars, R.A.C., Air Marshal Sir John Baldwin, K.B.E., C.B., D.S.O. (1st January, 1948); of The Royal Inniskilling Fusiliers, Colonel E. E. J. Moore, D.S.O. (1st September, 1947); of the 5th Royal Inniskilling Dragoon Guards, R.A.C., Major-General Sir Charles F. Keightley, K.B.E., C.B., D.S.O. (23rd November, 1947); of The Royal Norfolk Regiment, Colonel (hon. Brigadier) W. J. O'B. Daunt, C.B.E. (4th October, 1947); of The Royal Hampshire Regiment, Lieut.-Colonel (hon. Brigadier) P. H. Cadoux-Hudson, M.C. (1st January 1948).

Honours and Awards

New Year Honours.—The following awards were included in the New Year Honours List of 1st January, 1948 (the awards for services in India being dated 14th August, 1947) :—

G.C.B.—General Sir Montagu G. N. Stopford, K.C.B., K.B.E., D.S.O., M.C., A.D.C. General.

K.C.B.—Lieut.-General K. N. Crawford, C.B., M.C.

K.C.B. (Civil Division).—Brevet-Colonel W. H. Wiggin, C.B., D.S.O., T.D., Chairman, T. and A.F.A. for Worcestershire.

C.B.—Major-Generals :—R. T. O. Cary, C.B.E., D.S.O.; E. T. L. Gurdon, C.B.E., M.C.; J. C. Haydon, D.S.O., O.B.E.; C. Lloyd, C.B.E., T.D., Territorial Army; J. D. Shapland, D.S.O., M.C. Major-Generals (temporary): S. Arnott, C.B.E., D.S.O., M.D.; O. P. Edgcumbe, C.B.E., M.C.; G. W. Palmer, C.B.E.; F. W. H. Pratt, C.B.E., D.S.O., M.C., A.D.C.; W. D. Stamer, C.B.E., D.S.O., M.C.; L. C. Thomas, C.B.E., D.S.O., M.C.; J. S. Ballentine, C.I.E., Indian Army; W. D. A. Lentaigne, C.B.E., D.S.O., Indian Army; O. de T. Lovett, C.B.E., D.S.O., Indian Army; C. E. Pert, D.S.O., Indian Army; F. H. Skinner, C.I.E., O.B.E., Indian Army; H. H. Stable, C.I.E., Indian Army. Major-General (acting) :—K. C. Davidson, M.C. Brigadiers (temporary): A. J. H. Dove, C.B.E.; J. Lingham, D.S.O., M.C.; R. I. Jones, C.B.E., Indian Army; E. W. D. Vaughan, D.S.O., M.C., Indian Army.

C.B. (Civil Division).—Brevet-Colonel J. P. Grant, M.C., T.D., Chairman, T. and A.F.A. for Inverness County, and Colonel the Viscount Allendale, C.B.E., M.C., Chairman, T. and A.F.A. for Northumberland.

G.C.S.I.—Lieut.-General Sir Archibald E. Nye, G.C.I.E., K.C.B., K.B.E., M.C., Governor of Madras.

K.C.S.I.—Major-General T. O. Thompson, C.B., C.B.E., Director of Medical Services, India.

G.C.M.G.—Major-General Sir Hubert E. Rance, G.B.E., C.B., Governor of Burma.

K.C.I.E.—Major-General (T/Lieut.-General) H. R. Briggs, C.B., C.B.E., D.S.O., I.A.; Major-General (T/Lieut.-General) D. D. Gracey, C.B., C.B.E., M.C., I.A.; Major-General R. Hay, C.I.E., M.B., Director-General Indian Medical Service.

G.B.E.—General Sir A. F. Philip Christison, K.B.E., C.B., D.S.O., M.C.

Appointments

Great Britain.—Major-General O. L. Roberts, C.B., C.B.E., D.S.O., has been appointed G.O.C., Northern Ireland District (January, 1948).

Major-General R. K. Arbuthnott, C.B., C.B.E., D.S.O., M.C., has been appointed Chief of Staff, Scottish Command (January, 1948).

Burma.—T/Major-General G. K. Bourne, C.B.E., has been appointed Head of the British Services Mission to Burma (December, 1947—a new appointment).

War Office.—Major-General K. G. McLean, C.B., has been appointed Vice Adjutant-General, War Office (November, 1947). Major-General Sir Charles F. Keightley, K.B.E., C.B., D.S.O., has been appointed Military Secretary to the Secretary of State for War. Brigadier C. D. Packard, C.B.E., D.S.O., has been appointed Director of Military Intelligence, with temporary rank of Major-General (January, 1948). Major-General N. Cantlie, C.B., M.C., M.B., F.R.C.S., is to become Director-General, Army Medical Services on 1st April, 1948.

Directorate of Military Training.—The War Office announced on 19th January that the Directorate of Military Training has been strengthened by the appointment of a Director-General. He will direct the broad policy of the military training at home and overseas of the Regular and Territorial Armies, maintain liaison with the Armies of the Dominions, and co-ordinate the Army side of combined training with the other Services. These matters are to-day of such importance as to require the constant personal attention of an experienced officer. To enable him to carry out his special duties, the Director-General will be relieved as far as possible of detailed responsibility for the training organization, which will remain with his principal assistant, the Director of Military Training. Training establishments and schools in the United Kingdom and the Army's requirements of land for training will be particular concerns of the D.M.T. The functions of Director of Tactical Investigations are being developed and continued by the Director of Military Training. A post-war series of pamphlets on military training, now in course of preparation in the War Office, will embody the results of the tactical investigations carried out during and since the last war.

The following appointments have been made:—Major-General C. B. Callander, C.B., M.C., to be Director-General Military Training; Major-General G. C. Evans, C.B., C.B.E., D.S.O., to be Director Military Training.

Corrigendum

In the issue of the Journal for November, 1947, page 616, for "Lieut.-Colonel (temporary Brigadier) L. K. Lockhart, C.B.E., M.C." read: "Colonel (temporary Brigadier) L. K. Lockhart, C.B.E., M.C."

Promotions

The following promotions have been announced :—

Generals.—The following Lieut.-Generals to be Generals :—Sir Brian H. Robertson, Bt., K.C.M.G., K.C.V.O., C.B., C.B.E., D.S.O., M.C. (17th November, 1947, with seniority 3rd October, 1946) ; Sir James S. Steele, K.B.E., C.B., D.S.O., M.C. (17th November, 1947, with seniority 6th October, 1946) ; Sir Rob. M. M. Lockhart, K.C.B., C.I.E., M.C. (1st September, 1947, with seniority 1st July, 1945).

Lieut.-Generals.—The following Major-Generals to be Lieut.-Generals:—G. H. A. Macmillan, C.B., C.B.E., D.S.O., M.C. (17th November, 1947) ; R. N. Gale, C.B., D.S.O., O.B.E., M.C. (17th November, 1947) ; Sir Reginald A. Savory, K.C.I.E., C.B., D.S.O., M.C. (1st September, 1947).

Major-Generals.—The following Colonels (temporary or acting Major-Generals) to be Major-Generals :—E. E. Down, C.B.E. (30th October, 1947, with seniority 2nd March, 1945) ; W. H. Stratton, C.V.O., C.B.E., D.S.O. (17th November, 1947, with seniority 18th January, 1946) ; R. E. Urquhart, C.B., D.S.O. (17th November, 1947, with seniority 20th January, 1946) ; T. S. Airey, C.B., C.B.E. (18th November, 1947, with seniority 10th February, 1946) ; J. B. Dalison, C.B., O.B.E. (25th February, 1947, with seniority 7th January, 1947) ; D. C. Hawthorn, C.B., D.S.O. (10th May, 1947) ; O. de T. Lovett, C.B.E., D.S.O. (3rd June, 1947, with seniority 8th May, 1947) ; J. B. Macdonald, D.S.O., O.B.E. 23rd June, 1947) ; F. J. Walsh, C.B.E. (1st September, 1947) ; S. Greeves, C.B.E., D.S.O., M.C. (1st October, 1947, with seniority 22nd June, 1947) ; F. St. D. B. Lejeune, C.B.E., (4th December, 1947, with seniority 19th January, 1946) ; A. D. Campbell, C.B.E., D.S.O., M.C., B.A. (14th January, 1948, with seniority 20th February, 1946).

The following Colonels (acting Major-Generals) to be temporary Major-Generals :—J. R. N. Warburton, M.C. (28th July, 1947) ; H. Essame, C.B.E., D.S.O., M.C. (21st November, 1947).

The following Colonel (temporary Brigadier) to be acting Major-General.—C. de L. Gaussen, M.C. (28th August, 1947).

Retirements

The following General Officers have retired :—Major-General J. F. B. Combe, C.B., D.S.O., M.C. (30th October, 1947) ; General Sir A. G. O. Mosley Mayne, G.C.B., C.B.E., D.S.O., I.A. (1st September, 1947) ; Major-General G. W. Hodgen, C.B., O.B.E., I.A. (1st October, 1947) ; Major-General C. G. Woolner, C.B., M.C. (18th November, 1947) ; Major-General A. C. Duff, C.B., O.B.E., M.C. (4th December, 1947) ; Major-General D. T. Cowan, C.B., C.B.E., D.S.O., M.C. (9th January, 1948) ; Major-General H. P. M. Berney-Ficklin, C.B., M.C. (14th January, 1948).

Despatches

A.A. Command.—A Despatch, submitted on 21st October, 1946, to the Secretary of State for War by General Sir Frederick A. Pile, Bt., G.C.B., D.S.O., M.C., G.O.C.-in-C., Anti-Aircraft Command, was published in the *London Gazette* of 18th December, 1947. The Despatch describes the anti-aircraft defence of the United Kingdom from 28th July, 1939, to 15th April, 1945.

Middle East.—A Despatch, submitted on 27th January, 1943, to the Secretary of State for War by General Sir Claude J. E. Auchinleck, G.C.I.E., C.B., C.S.I., D.S.O., O.B.E., A.D.C., Commander-in-Chief, The Middle East Forces, was published in the *London Gazette* of 15th January, 1948. The Despatch deals with operations in the Middle East from 1st November, 1941, to 15th August, 1942.

Territorial Army

Training Camps.—The War Office announced last December that in 1948 the

duration of Territorial Army training camps will be eight instead of the customary fifteen days. The 1948-49 training directive which gives this information says that the overriding demands of the industrial drive make it imperative that no camp lasts longer, except where special needs exist, such as those of A.A. Command, who require R.A.F. co-operation and good weather.

"Those in camp for less than fifteen days must make up the balance by evening and week-end training."

The four main objects of T.A. training in 1948 are: The training of officers; the selection and training of instructors and leaders; the training of key-men in headquarters; final training of those Territorial Army units whose present role is to be different from that allotted them during the war.

So far as possible, camps will be arranged in conjunction with T.A. and Auxiliary Air Force Associations, who will ensure that they take place when suitable to the industrial and agricultural work of the majority of members. It is hoped to increase Regular Army assistance by providing equipment and Regular officers and men at week-end training centres.

The War Office is anxious that there should be evening training centres near unit headquarters. It considers that these, well-organized, should have a great influence on the spirit and morale of the Territorial Army.

The need to free as much land as possible means that camp sites and training areas must be used by a large number of T.A. units in rotation, and the camp season may be spread between May and October.

Miscellaneous

R.M.A. Sandhurst.—The banner given by King George V to the Royal Military College, Sandhurst, in 1918, to be carried on parade by the winner of the Champion Company competition, was, on 14th November, 1947, taken out of sanctuary from the Royal Military Memorial Chapel, where it had been stored for safe keeping since September, 1939, and presented to the Royal Military Academy by the Duke of Gloucester. The ceremony took place during a service at the chapel, Officer-Cadet C. V. Booth-Jones receiving the banner on behalf of Waterloo Company, the present champion company.

Palestine Medals.—It was announced last November that the King has approved proposals for the grant of the General Service Medals for specified service in Palestine since 27th September, 1945. A White Paper (Cmd. 7254, H.M. Stationery Office, 1d.) gives details.

Army Training.—Army basic training is to be re-organized to meet the manpower situation. The new system will start in the Spring of 1948. Instead of first going to Primary Training Centres and then to their regimental or corps training units, recruits will receive all their basic training at new units called Arms Basic Training Units. (A.B.T.Us.). A.B.T.Us. will not only give soldiers general military training but also preliminary specialist training in their own Arms of the Service.

The new system cuts out the four weeks spent at the old Primary Training Centres. Time spent at A.B.T.Us. will vary from ten weeks for an Infantryman or Field Gunner to twenty weeks for men in the Royal Signals and R.E.M.E.

Under the old training system men were selected for their Arm of the Service while at the Primary Training Centre. Under the new system, Personnel Selection Officers at the Ministry of Labour will interview a man on call-up and decide what Arm of the Service he is to join, taking into consideration his own wishes and qualifications. He will then go to the A.B.T.U. of that Arm and the full selection procedure will follow during his first fortnight there. This will decide a man's Army trade and his employment in his Corps or Regiment and ensure that he has been sent to the right Arm of the Service.

Evacuation of Italy.—The last of the British forces in Italy sailed from Venice

on 8th December, 1947, and the Headquarters of the Central Mediterranean Forces closed down on that date. The last unit to leave was the 2nd Battalion, The Essex Regiment.

THE YORK AND LANCASTER REGIMENT.—On 30th November, 1947, a small detachment of The York and Lancaster Regiment went to the village of Dolni Bousov in Czechoslovakia and received back a regimental drum which was lost in Crete in 1941.

The Germans deposited the drum, together with other war trophies, in a factory in the village. The factory was captured by partisans in May, 1945, and was later handed over, with its contents, to a Russian officer, who eventually transferred it to a representative of the Czechoslovak Army.

The British detachment brought an illuminated address of thanks, which was presented to the head of the village council on behalf of the Regiment.

MEMORIAL AT WEYMOUTH.—Major-General Clayton L. Bissell, United States Military and Air Attaché, unveiled on Weymouth Esplanade on 5th December, 1947, the town's D-Day memorial, commemorating the part Weymouth played in the invasion of France. Mounted on a 20-ft. Portland stone column is a bronze plaque presented to the town by the 14th Major Port, United States Army, and recording that most of the American assault force that landed on the shores of France on D-Day was launched through Weymouth and Portland harbours.

The memorial embodies a lamp of maintenance and a ship's bell (from H.M. launch 914) to sound the nautical hours day by day.

SHORT SERVICE.—The Army's short service bounty scheme has proved popular. Up to the end of 1947, 20,000 ex-soldiers had re-enlisted for short service engagements in the Regular Army.

NEW BADGE FOR R.A.D.C.—The King has approved a new badge for the Royal Army Dental Corps. The design is a laurel wreath within which are a dragon's head and a sword, and beneath the wreath is a scroll bearing the motto : " Ex dentibus ensis." The badge is in gilt and silver.

DOMINIONS

CANADA

ARCTIC EXERCISE.—Three officers of the Canadian Army Active Force were present as observers at the first air lift of the United States Army's " Exercise Yukon," which was a twenty-five-day Arctic exercise in which a reinforced United States Army rifle company was moved by air from McChord Field, Washington, to Big Delta, Alaska, and subsequently returned to its starting point. The exercise was designed to study Arctic air transport methods, Arctic indoctrination training methods, airfield defence manoeuvres, tactics, technique and organization for future Arctic operations.

SOVIET MILITARY ATTACHÉ.—It was announced in Ottawa on 23rd January, that the Canadian authorities have decided that the Soviet military attaché shall not be permitted to visit military establishments in Canada unless similar privileges are extended to the Canadian military attaché in Moscow.

AUSTRALIA

APPOINTMENT.—The King has approved the appointment of Colonel (temporary Brigadier) B. W. Pulver, C.B.E., D.S.O., Australian Staff Corps, as Aide-de-Camp to the King (6th August, 1946), vice Colonel (hon. Major-General) E. C. P. Plant, C.B., D.S.O., O.B.E., Australian Staff Corps, who has retired.

HONOUR.—The King has approved the posthumous award of the George Cross to Captain L. C. Matthews, M.C., Australian Military Forces, in recognition of gallant and distinguished services whilst a prisoner of war in Japanese hands.

BATTLES NOMENCLATURE COMMITTEE.—An Australian Battles Nomenclature Committee has been set up, under the chairmanship of General Sir Thomas Blamey. The duties of the Committee will be fourfold : to tabulate those actions fought

by Australian troops in the Pacific zone; to classify these actions with a definite system of naming which will indicate their relative importance; to define the geographical and chronological limits of each action; and to advise the United Kingdom Nomenclature Committee regarding battle zones, other than the Pacific area, in which Australian land forces fought.

INDIA

FAREWELL PARADE.—A farewell parade of the last battalions of the British Army to be stationed at Delhi—the 1st Royal Scots Fusiliers and the 2nd East Lancashire Regiment was held in the forecourt of Government House on 19th December, 1947.

The parade was a simple one. Only 100 officers and men of the two battalions with the King's colours took part. Lord Mountbatten received the Royal Salute, inspected the parade and addressed the men. The two parties marched past in quick time and then, led by the pipe band of the Fusiliers, marched out through the main gates.

FOREIGN

EGYPT

BRITISH MISSION.—The British military mission to the Egyptian Army was dissolved on 31st December, 1947, after ten years' existence.

FRANCE

VISIT TO ENGLAND.—General G. M. J. Revers, Chief of the General Staff of the French Army, visited the United Kingdom as the guest of the Army Council from 20th to 24th January and inspected British Army training establishments.

TURKEY

A Turkish military mission, headed by the Chief of the Turkish General Staff, made a nine-day visit to England last November, touring Service establishments and meeting the heads of the three Services.

NOTICE

GILL MEMORIAL SCHOLARSHIPS AND EXHIBITIONS AT BRIGHTON COLLEGE FOR THE SONS OF ARMY OFFICERS

About six Gill Memorial Scholarships and Exhibitions are offered this year for competition among sons of Army officers. These awards are tenable all the time a boy is at Brighton College, provided he is satisfactory. Their value will depend upon the financial position of the boy's parents. Candidates must be under 14 years on 1st June, 1948. The awards will be made on the results of the June Entrance Scholarships Examination at Brighton College. One Scholarship for the Brighton College Junior School will also be open to candidates who are under 11 on 1st June, 1948. Successful candidates for any of these awards will enter the College in September.

The War Office has power to nominate boys to compete for these awards, and applications for nomination by the War Office, accompanied by birth certificate and certificates of conduct from the headmasters of the schools which the boys have attended for the previous two years, should reach the Under-Secretary of State (C.2 Funds), The War Office, London S.W.1., not later than 17th April, 1948.

Further particulars about the awards may be obtained from the Headmaster of Brighton College.

AIR NOTES

GREAT BRITAIN

H.M. The King

The King has honoured the Auxiliary Air Force by conferring upon it the prefix Royal, in recognition of the distinguished service of the Force during the War. It will have the short title, R.Aux.A.F.

The Auxiliary Air Force was brought into being under the Auxiliary Air Force and Reserve Forces Act of 1924, as the Air Force counterpart of the Territorial Army.

The Air Council

Marshal of the R.A.F. Lord Tedder, Chief of the Air Staff, accompanied by Lady Tedder, left Northolt on 16th October for an informal tour of R.A.F. stations in the Mediterranean area, the Middle East, East Africa and Rhodesia. The tour was to have lasted a month, but on 31st October, Lord Tedder cancelled his visit to stations in Southern Rhodesia as he had become indisposed. He returned home on 9th November.

Appointments

Air Marshal Sir William Forster Dickson has been appointed to be Air Commander-in-Chief, R.A.F., Mediterranean and Middle East, from February, 1948, vice Air Marshal Sir Charles E. H. Medhurst, who then completes his tour of duty in this post.

Air Marshal Sir James Milne Robb has been appointed Vice Chief of the Air Staff, from 15th December, 1947, vice Air Marshal Sir William Dickson.

Air Vice-Marshal Sir William Elliot has been appointed Air Officer Commanding-in-Chief, Fighter Command, with the acting rank of Air Marshal, from 17th November, 1947, vice Air Marshal Sir James Robb.

Air Vice-Marshal G. A. H. Pidcock has been appointed Director-General of Armament at the Air Ministry with effect from 14th October.

Air Vice-Marshal R. S. Blucke has been appointed Air Officer in Charge of Administration, Technical Training Command, from 1st December, 1947.

Air Commodore L. T. Pankhurst has been appointed Director of Command and Staff Training at the Air Ministry from January, 1948, in succession to Air Commodore T. N. McEvoy.

Air Vice-Marshal J. W. Jones has been appointed Air Officer Commanding, Air Headquarters, Malaya.

Air Vice-Marshal J. D. Breakey has been appointed Air Officer in Charge of Administration, Bomber Command.

Air Marshal Sir George Pirie has been appointed Inspector-General of the Royal Air Force, from 1st January, 1948, in place of Air Chief Marshal Sir Norman H. Bottomley, who was placed on the Retired List at his own request.

Air Vice-Marshal P. E. Maitland has been appointed Air Officer Commanding No. 22 Group, Technical Training Command, with effect from 19th January, 1948.

Group Captain L. K. Barnes has been appointed Commandant of the Empire Air Navigation School at Shawbury, Shropshire, with the acting rank of Air Commodore, from 19th January, 1948, in succession to Air Commodore N. H. D'Aeth.

Air Commodore J. R. Whitley, on return from duty as Officer Commanding, R.A.F. Base, Karachi, has been appointed Director of Organization (Establishments) at the Air Ministry.

Marshal of the Royal Air Force Sir Sholto Douglas left Berlin on 31st October, 1947, on relinquishing his appointment as Commander-in-Chief of the British Forces in Germany, Military Governor of the British Zone, and British Member of the Allied Control Council for Germany. (See " New Year Honours.")

The King has approved the appointment of Air Marshal Sir John Baldwin as Colonel, The 8th King's Royal Irish Hussars, with effect from 1st January, 1948, in succession to Colonel (honorary Brigadier) J. Van der Byl, late Infantry, retired pay.

Group Captain J. Hutchieson has been seconded from the Air Ministry to the Ministry of Civil Aviation as Chief Medical Officer.

Group Captain Lord Selkirk has been appointed to the Council of the R.A.F. Benevolent Fund. He is Chairman of the Scottish Branch of the Fund, formed with effect from 1st November, 1947.

Promotions

The under-mentioned promotions are made with effect from 1st January, 1948 :—

Air Vice-Marshal to Air Marshal.—Sir Hugh P. Lloyd, K.B.E., C.B., M.C., D.F.C. (acting Air Marshal).

Air Commodore to Air Vice-Marshal.—C. E. N. Guest, C.B., C.B.E. (acting Air Vice-Marshal) ; D. V. Carnegie, C.B.E., A.F.C., (acting Air Vice-Marshal) ; L. F. Pendred, C.B., M.B.E., D.F.C., (acting Air Vice-Marshal) ; R. L. Ragg, C.B.E., A.F.C.

Group Captain to Air Commodore.—G. S. Shaw ; J. W. F. Merer ; N. Carter, D.F.C. ; The Earl of Bandon, C.B., D.S.O. ; T. B. Prickman, C.B.E.

Technical Branch.—*Air Commodore to Air Vice-Marshal.*—G. Combe, C.B. (acting Air Vice-Marshal) ; R. O. Jones, C.B., A.F.C., (acting Air Vice-Marshal).

Group Captain to Air Commodore.— P. S. Blockey, C.B.E. ; J. G. W. Weston, C.B. O.B.E. ; G. B. Beardsworth, C.B.

Equipment Branch.—*Air Commodore to Air Vice-Marshal.*—T. G. Bowler, C.B.E. (acting Air Vice-Marshal).

Grant of Acting Rank.—Air Vice-Marshal A. B. Ellwood, C.B., D.S.C., is granted the acting rank of Air Marshal (8th October, 1947).

Air Vice-Marshal Sir Hugh P. Lloyd, K.B.E., C.B., M.C. D.F.C., is granted the acting rank of Air Marshal (18th November 1947).

The following Air Commodores are granted the acting rank of Air Vice-Marshal (1st November 1947).—L. Darvall, C.B., M.C. ; R. A. George, C.B.E., M.C. ; E. S. Goodwin, C.B., C.B.E., A.F.C. ; C. E. N. Guest, C.B., C.B.E. ; T. A. Langford-Sainsbury, C.B., O.B.E., D.F.C., A.F.C. ; K. B. Lloyd, C.B.E., A.F.C. ; D. F. Stevenson, C.B., C.B.E., D.S.O., M.C. ; S. E. Toomer, C.B., C.B.E., D.F.C.

Technical Branch.—The following Air Commodores are granted the acting rank of Air Vice-Marshal (1st November, 1947).—G. Combe, C.B., ; R. O. Jones, C.B., A.F.C.

Correction.—The following officers of the Technical Branch whose names appeared on page 623 of the November issue of the Journal should have been shown as promoted from Group Captain to Air Commodore, and not from Air Commodore to Air Vice-Marshal.—G. F. Smylie, C.B., D.S.C. ; G. D. Daly, C.B.E., D.F.C. ; C. E. H. Allen, C.B., D.F.C. ; C. N. H. Bilney, C.B.E. ; C. P. Brown, C.B., C.B.E., D.F.C. ; E. H. Richardson, C.B.E. ; H. E. Forrow, C.B., O.B.E. ; F. E. Vernon, C.B., O.B.E. ; R. G. Hart, C.B., C.B.E., M.C. ; H. W. Heslop, C.B., O.B.E. ; L. Dalton-Morris, C.B.E. ; R. C. Wansbrough ; J. F. Titmas, C.B.E. ; J. G. Franks ; A. F. Hutton, D.F.C. ; H. D. Spreckley, O.B.E. ; W. A. Opie.

Retirements

Air Chief Marshal Sir Norman H. Bottomley, K.C.B., C.I.E., D.S.O., A.F.C., (at own request), 1st January, 1948.

Air Marshal Sir Arthur Coningham, K.C.B., K.B.E., D.S.O., M.C., D.F.C., A.F.C. (at own request), 7th November, 1947.

Group Captain N. R. Buckle, M.V.O. (at own request), retaining the rank of Air Commodore, 2nd December, 1947.

Wing Commander J. S. Chick, M.C., A.F.C., retaining the rank of Air Commodore, 27th December, 1947.

MEDICAL BRANCH.—Air Commodore (acting Air Vice-Marshal) T. J. Kelly, C.B.E., M.C. (and re-employed), 18th April, 1947.

TECHNICAL BRANCH.—Group Captain G. W. Birkinshaw, C.B., retaining the rank of Air Commodore, 22nd December, 1947.

REVERSIONS TO RETIRED LIST

MEDICAL BRANCH.—Air Commodore (acting Air Vice-Marshal) T. J. Kelly, C.B.E., M.C., retaining the rank of Air Vice-Marshall, 18th October, 1947; Air Commodore Kenneth Biggs, C.B.E., M.C., retaining the rank of Air-Vice-Marshal, 2nd November, 1947.

HONOURS AND AWARDS

GEORGE CROSS

The King has approved the award of the George Cross to :—

521319 *Sergeant John Archibald Beckett, R.A.F. Station, Ein Shemer, Air Headquarters, Levant* (*deceased*).

On the night of 28th March, 1947, during refuelling operations on a Lancaster aircraft of No. 38 Squadron, a violent fire broke out in the pumping compartment of the refuelling vehicle of which Sergeant Beckett was the driver. He was enveloped in the flames, which set alight the Lancaster's fuselage. Another airman beat out the flames on Sergeant Beckett, but not before the latter had been very severely burned on the hands and face. There was grave danger that the main tank of the refuelling vehicle, containing over 2,000 gallons, would explode and imperil the 20 or more aircraft in the park.

In spite of his serious injuries, Sergeant Beckett got into the driver's seat of the blazing vehicle and drove it about 400 yards to a point where it could do no further damage. He collapsed and was taken to the station sick quarters. He died on 12th April, 1947. The fires in the Lancaster aircraft and in the vehicle were extinguished with no further damage to persons or property. By his prompt and gallant action, Sergeant Beckett saved a number of valuable aircraft from almost certain destruction and his comrades who were working in the vicinity from risk of serious injury.

NEW YEAR HONOURS

The following awards were included in the New Year Honours conferred by the King :—

Baron.—Marshal of the Royal Air Force Sir (William) Sholto Douglas, Commander-in-Chief and Military Governor, Germany, 1946-47.

K.C.B. (Military).—Air Vice-Marshal Leslie Oswald Brown.

C.B. (Military).—Air Vice-Marshal H. T. Lydford, Air Vice-Marshal G. A. H. Pidcock, Air Vice-Marshal W. E. Theak, Acting Air Vice-Marshal T. C. Traill, Air Commodore P. C. Livingston, Acting Air Commodore C. D. Adams.

K.C.B. (Civil).—Sir James H. Barnes, Permanent Under-Secretary of State, Air Ministry.

G.B.E. (Military).—Air Chief Marshal Sir (Alfred) Guy R. Garrod.

K.B.E. (Military).—Air Vice-Marshal Matthew B. Frew.

C.B.E. (Military).—Air Commodore L. J. V. Bates, Air Commodore A. F. Hutton, Acting Air Commodore R. H. S. Spaight, Group Captain J. Sullivan, Group Captain F. Wright, Acting Group Captain F. J. Manning, Acting Group Captain D. C. Stapleton.

K.C.I.E.—Air Marshal Hugh S. P. Walmsley, Air Officer Commanding-in-Chief in India and Deputy Supreme Commander (Air).

Royal Auxiliary Air Force

Air Vice-Marshal Geoffrey Hill Ambler, C.B., C.B.E., A.F.C., is appointed Honorary Air Commodore of No. 609 (West Riding) Squadron, 15th October, 1947.

Sir William Bromley-Davenport, K.C.B., C.M.G., D.S.O., T.D., relinquishes his appointment as Honorary Air Commodore of No. 610 (County of Chester) Squadron, 31st October, 1947.

Group Captain Ian Robertson Parker, O.B.E., is appointed Honorary Air Commodore of No. 610 (County of Chester) Squadron, 8th December, 1947.

In the House of Commons on 3rd December, Mr. De Freitas, Under-Secretary for Air, announced certain changes in the role of the Auxiliary Air Force squadrons. The four bomber squadrons are to be converted to fighters. All twenty Auxiliary Air Force squadrons will now form part of the air defences of this country.

University Air Squadrons

The Air Ministry announced on 4th December that 416 men were flying as members of the R.A.F. Volunteer Reserve in the 14 University Air Squadrons. Of these, 158 had previous flying experience, many of them as Service pilots. The strengths of the squadrons range from 55 at Oxford to 17 at Southampton.

Royal Auxiliary Air Force Regiment

Seven new squadrons of the Royal Auxiliary Air Force Regiment are being formed, bringing the total number to twelve. The new squadrons are at Aldergrove (Northern Ireland), Hucknall (Notts), Bishopbriggs (Glasgow), Honiley (Warwickshire), Thornaby (Yorks), Dyce (Aberdeen), and Doncaster.

Recruiting is open to all suitable candidates wishing to undertake paid spare-time service, but ex-Service men, especially those who served in the R.A.F. Regiment during the War, will receive priority. Apart from gunners, there are vacancies for drivers, mechanics, clerks, wireless operators, and cooks.

Women's Auxiliary Air Force

Administrative Training.—A new general service training refresher course for W.A.A.F. officers has been instituted which provides knowledge of current R.A.F. organization and administration for those who have accepted extended service Commissions. During the War W.A.A.F. officers employed on technical work had no opportunity of gaining this knowledge. There are also two courses for N.C.O's in which the emphasis is on practical work and the development of personality and powers of leadership. These courses last from two to four weeks. A fourth course of 14 days is for the many airwomen who have returned to the Service from civilian life and have in many cases changed their trade. All the courses are being given at the R.A.F. station at Hawkinge, which has now become a W.A.A.F. depot.

When accommodation is available it is intended to open a recruit course. At present this training is given at Wilmslow, near Manchester.

R.A.F. Marine Branch

A Marine Branch of the R.A.F. has been constituted to take charge of the marine units of the Force. These include a flying boat depot ship, two auxiliaries which serve as radar and torpedo targets, high-speed target-towing craft, and many smaller types of boats for bombing ranges and flying-boat stations.

Most of the permanent officers for the new branch will be drawn from regular N.C.O. coxswains, but if necessary additional officers will be recruited from other branches of the R.A.F. or from the Merchant Navy. For the present, permanent officers will be selected from officers of marine units holding emergency or extended service Commissions. Most of the marine engineer posts will be filled by officers of the R.A.F. Technical Branch. Posts which require Ministry of Transport marine engineer certificates will be filled by recruitment of fully qualified Merchant Navy engineer officers or ex-naval engineer officers on a short service Commission basis for five years on the active list, with a gratuity at the rate of £100 a year.

Personnel

Malcolm Clubs.—During his tour of the Middle East in October, Marshal of the R.A.F. Lord Tedder opened a new Malcolm Club at the R.A.F. station at El Firdan. Malcolm Clubs, founded by Lady Tedder and named after the late Wing Commander Hugh Malcolm, V.C., exist to provide those serving in the R.A.F. with canteens, leave hostels, shops and premises where they may enjoy a home-like atmosphere. The clubs are usually self-supporting, and any profits are utilised to improve the facilities. The club at El Firdan, built entirely by members of the R.A.F., is the tenth in the Middle East Command.

Untraced Airmen.—In the House of Commons on 10th December, Mr. A. Henderson, Secretary of State for Air, said that about 9,000 members of the R.A.F. who were reported missing in Europe remained untraced. Most of these were lost over North-West Europe, including Germany and Poland, but it was not possible to say how many were lost in each country. It was estimated that a further 12,000 were lost over the sea, and it was unlikely that positive evidence of their fate would now be discovered. R.A.F. missing research units were still at work in Germany and other European countries, but, to his regret, permission to go into Poland had not yet been obtained. In the previous six months these units had accounted for nearly 2,000 officers and men whose deaths could previously only be presumed. Altogether about 18,000 had now been traced. With two exceptions, all members of the R.A.F. who had been posted as prisoners of war had been traced.

Income-tax Exemptions.—The training expenses allowance and bounty payments made to the Air Force Auxiliary and Reserve Forces are now exempt from income-tax. The exemptions are retrospective and take effect from 6th April, 1947. They do not include ordinary pay and taxable allowances which are paid for periods of continuous training of over 48 hours.

College of Aeronautics.—The College of Aeronautics at Cranfield, near Bedford, was opened to visitors for the first time on 8th December, when Mr. George Tomlinson, Minister of Education, made an inspection. The College provides engineering, technical and scientific training to fit students for leadership in the aircraft industry, civil aviation, the Services, and education and research. A two-year course is given to selected students of graduate standard, and the three main departments of the College deal with aerodynamics, aircraft design, and aircraft propulsion. Although opened in October, 1946, the College is far from being fully equipped, partly because of economic difficulties and partly because more time is needed to assemble some of the larger equipment; much of that now in use has been brought from Germany, including some of the wind tunnels. Most of the 85 students taking the current course are from the aircraft industry and the forces, a few are direct entrants from the universities, and there are three from foreign countries, two Poles and one Czech. Air Chief Marshal Sir Edgar Ludlow-Hewitt is Chairman of the Board of Governors.

Special Flights

Mission to Turkey.—Six "Lincoln" aircraft of the R.A.F. Bomber Command took part in a mission to Turkey in October. They left Binbrook, Lincolnshire, on the 1st for

Shallufa, Suez Canal Zone, with one stop at Castel Benito, Libya. On 13th October they arrived at Ankara on a goodwill visit of seven days, during which the officers and men were cordially welcomed by the Turkish authorities and the Governor of Istanbul gave a ball in their honour. The mission was led by Air Vice-Marshal S. C. Strafford, Senior Air Staff Officer, Bomber Command.

MISSION TO AUSTRALASIA.—A " Lincoln Crusader " aircraft left the Central Bomber Establishment at Marham, Norfolk, on 26th October on a flight of 13,000 miles to the Far East and Australasia. Led by Group Captain S. O. Bufton, the mission included twelve specialists, who took part in discussions on bomber operations with the Far East Command and the Dominion Air Forces. The mission returned to Marham on 17th December.

FAST FLIGHT FROM EDINBURGH.—A Gloster " Meteor IV " jet-propelled aircraft piloted by Squadron Leader James Lomas flew on 25th November from Turnhouse, near Edinburgh, to Bovingdon, Herts, in 30 mins. 25 secs. The distance was 313.1 statute miles, and the average speed 617.6 miles an hour, the highest speed being between 630 and 650 miles an hour at 20,000 feet. The flight was made to see by how much the comparable record, set up in 1938 by Squadron Leader Gillan, of 408.75 miles an hour in a " Hurricane " aircraft from Turnhouse to Northolt, could be exceeded.

BIRD MENACE AT AIRFIELDS

Preliminary experiments conducted at the R.A.F. Station, Shawbury, Shropshire, in the use of peregrine falcons to discourage the congregation of flocks of birds on airfields have given encouraging results. The Air Ministry, which provided a small sum of money for the experiment, states that the cost of damage to R.A.F. aircraft by birds during 1946 was estimated at £20,000. In 1945 it was as high as £120,000. Accidents occurred when pilots lost control while trying to avoid a bird, and it is thought that birds may have caused some of the unexplained air accidents. A comparatively small area of damage to the wing of a high-speed machine, caused by collison with a bird, may set up air flow disturbances which eventually cause the aircraft to break up in the air, and the wreckage might give no indication of the primary cause.

After further trials at Shawbury the falcons were to be moved to an airfield of the R.A.F. frequented by flocks of seagulls, for further experiments.

FOREIGN

AFGHANISTAN

Following the recent visit to England by Colonel Abdul Razak Khan, Chief of Staff of the Royal Afghan Air Force, an order has been placed for twelve Anson Mk. XVIII aircraft. Deliveries are due to begin in April.

DENMARK

On 1st December, 1947, a provisional Joint Air Command took over the direction of the Danish Air Force and Naval Air Service. The head of this new organization is Colonel Oerum, who also retains his post as Inspector-General of the Air Force. A representative of the Naval Air Service is to fill the post of Chief of Staff of the Joint Air Command.

The Minister of Defence will be advised on air force questions by Lieut.-Colonel Birksted, who was Chairman of the Army/Navy Advisory Committee which was recently disbanded, and who held the rank of Wing Commander while serving with the Royal Air Force during the War.

This unification of command over the Air Force and the Naval Air Service has been projected for some time, but it still lacks the approval of the Danish Parliament.

RUSSIA

RED BANNER MILITARY/AIR ACADEMY.—By the end of March, 1948, candidates will be selected for the first Commanders' Correspondence Course and work on the course will begin on 1st September, 1948.

The main qualifications required by officers applying for the course are :—

(*a*) The candidate must be medically fit and not over 45 years of age.

(*b*) He must possess a favourable service reference and a Party-Political certificate of character.

(*c*) He must possess not less than five years experience as a commander after completing his military aviation training. Of these five years, two years, at least, must have been spent as a commander of an air squadron, or as the head of one of the services of an aviation regiment, or in the rank equivalent to that of a Squadron Commander.

(*d*) He must have a good general educational background and a thorough military knowledge from an aviation training establishment.

Successful students on the course will receive diplomas which will entitle them to the same privileges as those who complete the main courses at the Military Academy.

SWEDEN

Recently the Swedish Government has ordered a further consignment of Vampires from England. No actual figures have been disclosed, but the order is thought to represent the largest number of these aircraft that has ever been placed with the De Havilland Company from abroad.

Now that the Swedish Air Force has had considerable experience with the service operation of the Vampire under both temperate and Artic conditions, satisfaction with the aircraft is reflected in their demand for more.

The Vampires will be fitted with the latest tail-unit with the new lowered tail-plane and will have the "long range wing." They will also have provision for fitting rocket projectiles or bombs under the wing.

UNITED STATES

NEW INSPECTOR-GENERAL.—Major-General Hugh J. Knerr has been appointed Inspector-General of the U.S.A.F. in succession to Major-General Junius Jones. Before this new appointment, General Knerr was Secretary of the Air Board.

EXPANSION OF PILOT TRAINING PROGRAMME.—The U.S.A.F. pilot training programme is to be expanded during 1948 from the present rate of 1,000 pupils per year to at least 3,000 per year. Of this total, 2,000 are expected to complete flying training satisfactorily. It is hoped to recruit the greater proportion of the pupils from two-year college students who are considered to be the best material for pilot training.

By mid-1948, the total personnel strength of the U.S.A.F. is expected to be about 64,000 officers and 337,000 other ranks.

STRENGTH OF AIR FORCES.—The Air Policy Commission, appointed by the President, have recommended that the U.S. Air Force be increased to nearly 7,000 first-line aircraft and the Navy Air Arm to nearly 6,000 first-line aircraft. These will be piloted—not pilotless—aircraft.

AIRBORNE WINTER MANOEUVRES.—The 505th Regimental Combat team of the 82nd Airborne Division, supported by elements of the Ninth Air Force, are due to carry out manoeuvres during the Winter in the Lake Ontario area.

The manoeuvres will be a complete airborne operation with heavy engineer equipment including bulldozers brought in by air for the construction of an airstrip. Re-supply, evacuation and reinforcement by air will also be tested during the operation. The climax will be a 72-hour airborne attack some time between 9th and 29th February. The jump

zone will be near the Eastern shore of Lake Ontario which, at that season, will be frozen over and unsuitable for a beachhead operation.

JET AIRCRAFT.—A second type of jet fighter aircraft—the P-84 " Thunderjets," built by the Republic Aviation Corporation at Farmingdale, L.I., is now " fully qualified for operational service."

In its gun tests, the six guns are reported to have fired 70,000 rounds, over 75 per cent. while the aircraft was flying at a speed in excess of 500 miles an hour. It is also claimed that the rate of fire is over 50 per cent. higher than that attained by aircraft guns in the War.

Three fighter groups are to be equipped with "Thunderjets," the first will have eighty-three of these aircraft.

The other jet-fighter type is the P-80 " Shooting Star."

UNITED STATES AIR ACADEMY.—A Bill was introduced on 12th December, by Senator Conally for the establishment of a United States Air Academy at Randolph Field, Texas. The Bill was read twice before the Senate and has been referred to the Committee on Armed Services.

If this Academy is established it will take over the training of all air cadets for the regular Air Force who at present undergo their training at the United States Military Academy, West Point.

YUGOSLAVIA

NATIONAL PILOTS' SCHOOL.—During 1948, a large number of young people of both sexes will be accepted for training at the National Pilots' School.

The first course will start on 1st March, 1948, and the second on 1st July, 1948, each course lasting three and a half months.

Those who wish to enter must fulfil the following requirements :—

(*a*) Be over 17 and under 25 years of age.
(*b*) Be physically fit for flying (to be confirmed by medical examination).
(*c*) Have attended a Model Aircraft course and have passed successfully.
(*d*) Have passed the " B " glider course.
(*e*) Have reached an educational standard corresponding to the Junior Schools Certificate in this country.
(*f*) Fulfil requirements as regards work and general conduct.

Candidates who pass these courses may continue their studies at the Reserve Officers' Schools, and may train at flying training establishments and schools, which will enable them to become Air Force pilots, Civil Air Line pilots and instructors at the National Flying School.

REVIEWS OF BOOKS

(Note.—Only books which are presented to the library are reviewed in the Journal.)

GENERAL

English Guns and Rifles. By J. N. George. (Samworth.) 37s. 6d.

This work has been eagerly awaited by the " Muzzle Loaders " in this country as well as in the United States, for John Nigel George was a leading authority on firearms. It is a companion volume to his first work *English Pistols and Revolvers* published in 1937; but its appearance has been held up owing to the War and the author's death.

The historical data in this new volume are lightened by some amusing stories such as that of the tollgate keeper blazing away with his muzzle loading blunderbuss at the highwayman, which recalls the romantic days of England 100 to 150 years ago. We can find in it, too, matter for pride in the fine craftsmanship of our forefathers in their private workshops which made this Country the leading gunsmithy of Europe.

The whole development of English shoulder arms, from the days of the earliest " hand gonne " in the XVth Century following the invention of gunpowder, via the matchlock, the flintlock—including famous Army Brown Bess, to " Enfields " and the metallic cartridge breachloader, is dealt with faithfully and authoritatively. The fine plates are supplemented with no less than fifty line drawings in the author's own hand. There is also a complete list of English Gunsmiths—most useful to lovers of " old iron."

Visitors to the Royal United Service Museum will find many specimens of the military small arms described in this valuable work.

NAVAL

History of United States Naval Operations in World War II. Vol. I. The Battle of the Atlantic. September, 1939–May, 1943. By Samuel Eliot Morison. (Little, Brown and Company, Boston). 432 pages.

This is the second of a series of volumes dealing with the operations of the U.S. Navy in its various theatres during the 1939–45 War. As stated in the Foreword by the Secretary of the U.S. Navy, the author has been given access to all records and was free to discuss all problems with U.S. Naval officers; but " it is in no sense an official history." The reader should also realise that this is an American book and, as such, almost entirely concerned with the U.S. Forces; European Allies are only occasionally mentioned. So far the only comparable account of the British part is the somewhat slender official publication *The Battle of the Atlantic* published by the Stationery Office in 1946. But whereas the American book contains much that relates to shore administration, high policy and descriptions of training centres, etc., and tells the story geographically, the British account is concerned only with events at sea and the story is told chronologically. It is to be hoped that something more comprehensive to supplement the latter will not be too long delayed.

From cover to cover, and including a somewhat lengthy introduction by Commodore Knox, U.S.N., which deals with naval statistics between the two wars, this book bears the hall-mark of good literature. It is easy to read, and free from bewildering argument and those mathematical tables, graphs and diagrams which are usually rather boring.

Captain Morison makes some critical comments on the attitude of the U.S. merchant seaman toward his ship in time of war, and compares this with the attitude of the Naval Armed Guard. To the bluejacket his ship is " his country's ship, to be defended with his life "; " but to the union-indoctrinated merchant seaman the ship is the owner's ship, his class enemies' ship, to whom he owes nothing, and from which he is morally entitled to squeeze all he can." He then suggests that in any future war the U.S. Merchant Marine should be taken over by the Navy. This difference in the attitude of the two sorts of sailors to their ship is so different to that in the British Royal and Merchant Navies, that one cannot help wondering whether it is not exaggerated.

One danger in writing history as soon as this book must have been written after the War, is that the author must rely on what material was then available. For the American picture of the Battle of the Atlantic, Captain Morison doubtless had ample official records and personal reminiscences; but for the German picture he seems to have had to go to reports from enemy sources which were on an unduly high plane. Doenitz wrote what he thought should have happened; for what *did* happen it would be necessary to have access to the reports of the U-boat captains. Most of the latter, when interviewed after the War, criticised Doenitz for " too much back-seat driving."

In order to get a well-balanced picture of both sides of the Battle, it is necessary to read more than we can in this book about the German U-boat service—the officers and men, their training, their capabilities and limitations, and above all, their tactics. The " Pack Attack," as perhaps the most important feature of the whole campaign, surely deserves more than half a page, for even if U.S. escorts participated in few of these attacks, American merchant ships formed part of most of the convoys which were subjected to them.

The author describes vividly the early struggles of the high command to cope with the growing U-boat menace with inadequate counter-measures and untrained personnel. How critical was the position on the Atlantic seaboard of America in the Summer of 1942 is shown by the exchange of letters in forthright terms between General Marshall and Admiral King. This chapter on " Examples, Errors and Lessons " shows that the U.S. Navy is not afraid to chronicle its failures and learn by them—that is history as it should be written.

The North Russia run is well described and with considerable drama, especially as relating to the ordeal of Convoy P.Q.17.

In general this is a valuable history of the Battle of the Atlantic from the American point of view, but it devotes an undue amount of space to what may be called the shore aspect at the expense of what happened at sea. There are full chapters on policies, lend-lease, naval base agreements and organizations; but scarcely enough space is devoted to the actual fighting.

The charts and maps are excellent and the photographs interesting.

We are promised a second volume dealing with the period 1943–45. Perhaps by the time this is written, more records and reports will have become available from the enemy's side, and we shall have the benefit of American reactions to German views and claims.

The Japanese at Leyte Gulf—The Shō Operation. By James A. Field, Jr. (Princeton University Press, London, Geoffrey Cumberlege.) 14s. 0d.

This is the Japanese side of the history of the events leading up to the Battle for Leyte Gulf in October, 1944, and their account of the engagements in what they called the Shō Operation.

The author explains in his Preface that his sources of information were the official Japanese records and interrogations of their naval officers shortly after the close of hostilities. Some of the former were destroyed in the fire raids on Tokyo, and many of the latter lost their lives in action, but " it seems improbable that further information will be available in any quantity. . . ." Whether anything of much value may still be forthcoming or not, this book provides most of the essentials: it describes the overall Japanese plan; its partial fulfilment; and the reasons for a failure which meant nothing less than the end of the Japanese navy and, before long, of the War.

In order to get a right perspective of the whole of this desperate effort by the Japanese to check the American advance and the direct threat to Japan which capture of the Philippines implied, it is essential to read this well compiled record of what the enemy had set out to do and how nearly he achieved it. It brings out clearly how successful was the strategem of using the Main Body, or Mobile Fleet under Admiral Ozawa to " manœuvre in the seas to the East of Luzon for the purpose of luring the enemy to the North "; but

it shows, too, that this might have been even more successful if he had not lacked air support and co-operation.

Admiral Kurita, commanding the First Division Attack Force which made its way through the San Bernardino Strait, also complained bitterly of "the lack of planes, either for search or attack, overall." Battered and weak though his force was when it finally emerged to the East of Samar, it might still have caused devastating losses to the unprotected American carriers and even achieved its primary object of attacking the landing operation in Leyte Gulf itself, if Kurita could have had adequate air reconnaissance. As it was he ceased to press home the strategical opportunity which Ozawa had obtained for him, and withdrew what was left of his squadron just when it should have been rammed home in a Kamikaze effort.

Nishimura, commanding the Third Section, got nearest to striking a vital blow at the whole U.S. Phillipines campaign on the night of 24th-25th October. He, too, suffered from lack of air cover during his approach through the Mindanao Sea and suffered severe casualties before he could get within striking distance of his main objective. But, ultimately, it was in a night action with the American surface forces that this, the most dangerous thrust of all, was defeated: torpedo craft, backed by the guns of battleships and cruisers, saved the situation for the Americans; aircraft played no part in this most critical engagement.

These are only the high lights of a most complicated drama in which we see the Japanese depicted in all his limitations, his defects, but withal, his fatalistic courage.

Mr. Field has done a great service to naval history in compiling this record which is indispensable to the study and understanding not only of the Battle of Leyte Gulf, but also of the beginning of the end of the War in the Pacific.

ADDITIONS TO THE LIBRARY

GENERAL

CUSTOMS OF THE SERVICES. By A. H. Stradling. Crown 8vo. 91 pages. (Gale and Polden 1946).

AMERICAN MILITARY GOVERNMENT IN GERMANY. By Harold Zink. Demy 8vo. 266 pages. (Macmillan 1947.) 18s.

PALESTINE MISSION. A PERSONAL RECORD. By Richard Crossman. Demy 8vo. 256 pages. (Hamish Hamilton 1947.) 10s. 6d.

The author, who is a Labour M.P., and a Journalist, was appointed to the Anglo-American Committee of Enquiry regarding the Problems of European Jewry and Palestine which presented its report in April, 1946. This is a personal record of his experiences as a member of that Committee, of the many witnesses the Committee heard both for the Arabs and the Jews and of the various countries they visited in an attempt to assess the problem.

JAPAN PAST AND PRESENT. By Edwin O. Reischauer. Crown 8vo. 192 pages. (Duckworth 1947.) 8s. 6d.

A brief interpretative history of Japan from earliest to modern times, emphasising the political and social institutions of the past that have shaped the present Japan.

THE EXPANSION OF EUROPE INTO THE FAR EAST. By Sir John Pratt. Crown 8vo. 218 pages. (Sylvan Press 1947.) 10s. 6d.

The author has confined himself mainly to China—which is the centre of all political activities in the Far East—and especially to the problems created by the Japanese aggression upon China and by the rival ambitions of the various Powers, including America.

JERSEY UNDER THE JACKBOOT. By R. C. F. Maugham. Crown 8vo. 167 pages. (Allen 1946.) 7s. 6d.

A first-hand account of the Island's ordeal during the German occupation.

THE UNITED STATES AND THE NEAR EAST. By E. A. Speiser. Crown 8vo. 263 pages. (Oxford University Press 1947.) 9s. 6d.

This is the second volume of the AMERICAN FOREIGN POLICY LIBRARY, edited by Sumner Welles. It is concerned with the outlines of the Near East problem, with recent history and very largely with British, rather than with American policy.

THE STRANGE ALLIANCE: THE STORY OF AMERICAN EFFORTS AT WAR-TIME CO-OPERATION WITH RUSSIA. By John R. Deane. Demy 8vo. 344 pages. (Murray 1947.) 18s.

CANADA: A STUDY OF COOL, CONTINENTAL ENVIRONMENTS AND THEIR EFFECT ON BRITISH AND FRENCH SETTLEMENT. By Griffith Taylor. Demy 8vo. 524 pages. (Methuen 1947.) 25s.

The book is divided into three parts, of which the first deals with the exploration, structure, climate and soils; the second with the twenty Natural Regions, classified into Populous Regions, Transition Regions, Pioneer Regions and Tundra Lands; and the third part with environments as related to Man. Various chapters describe the Spread of Settlement, Fish, Fur, Forests, Paper-Pulp resources and Crops. The last chapters describe Mining, Communications and Population Problems.

BELGIUM. By Jan-Albert Goris. Demy 8vo. 478 pages. (University of California Press 1945.)

One of the United Nations Series. A brief history and a handbook. Not a guide book.

THE THIN RED LINES. By Charles Graves. Demy 8vo. 183 pages. (Standard Art 1947.) 5s.

A record of Cable and Wireless Limited over 355,000 miles of cable and the wireless network during the War.

THE AMERICAN SPEECHES OF THE EARL OF HALIFAX. By the Earl of Halifax. Demy 8vo. 449 pages. (Oxford University Press 1947). 21s.

These speeches were delivered all over the United States during 1941–1946. They deal with phases of the War and Anglo-American co-operation. A brief, note precedes each speech and places it in the chronology of world events.

OIL AND PETROLEUM YEARBOOK 1947. By Walter E. Skinner. Crown 8vo. 227 pages. (Skinner 1947.) 15s.

Almost entirely a directory of Oil companies. A short preface gives the oil production for 1946.

RUSSIAN ZONE. By Gordon Schaffer. Demy 8vo. 192 pages. (Allen and Unwin 1947.) 10s. 6d.

The first eye-witness account of how nearly 20,000,000 people live under Soviet military rule in Germany.

THE NUREMBERG DOCUMENTS: SOME ASPECTS OF GERMAN WAR POLICY, 1939–1945. By Peter De Mendelsohn. Demy 8vo. 291 pages. Allen & Unwin 1946.) 7s. 6d.

THE AWAKENING OF MODERN EGYPT. By M. Rifat Bey. Demy 8vo. 242 pages. (Longmans, Green 1947.) 15s.

A Study by an Egyptian historian of the development of his country from the time of Napoleon up to the beginning of the present Century. The book discusses the inter-relation of English, French and Turkish interests in Egypt, and gives the Egyptian's view of the part played by both his country and its leaders during the XIXth Century in European and national affairs.

COLONIAL ADMINISTRATION BY EUROPEAN POWERS. Crown 8vo. 97 pages. (Royal Institute of International Affairs, 1947.) 4s. 6d.

A series of Papers read at King's College, London, 14th November to 12th December 1946.

THE BRITISH IN ASIA. By Guy Wint. Demy 8vo. 224 pages. (Faber & Faber 1947.) 12s. 6d.

This book considers the effect of India's independence on the international balance, and pictures Asia without the stabilising force of the British Empire over all its southern part. The Russian Empire in Asia is also considered.

PATH TO NIGERIAN FREEDOM. By Obafemi Awolowo. Demy 8vo. 138 pages. (Faber & Faber 1947.) 7s. 6d.

The author discusses the problems to be solved before self-government can be given to Nigeria.

END OF A BERLIN DIARY. By William L. Shirer. Demy 8vo. 369 pages. (Hamish Hamilton 1947.) 15s.

The sequel to *The Berlin Diary* (December 1940), and compiled during a return visit after the War.

GERMANY—BRIDGE OR BATTLEGROUND. By James P. Warburg. Demy 8vo. 386 pages. (Heinemann 1947.) 15s.

A kind of guide to German policy. The well known conferences and agreements and the Zones in Germany are discussed.

CORONATION OF THEIR MAJESTIES KING GEORGE V AND QUEEN MARY, 22nd and 23rd June, 1911, and the Royal Drive of the 29th June, 1911. Orders by Field-Marshal H. H. Viscount Kitchener of Khartoum. 231 pages. (His Majesty's Stationery Office 1911.)

THE COLONIES TO-DAY AND TO-MORROW: BRITISH COMMONWEALTH AFFAIRS No. 1. By Sir Drummond Shiels. Demy 8vo. 36 pages. (Longmans, Green 1947.) 1s.

THE QUESTION OF DEFENCE: BRITISH COMMONWEALTH AFFAIRS No. 2. Demy 8vo. 30 pages. (Longmans, Green 1947.) 1s.

COMES THE RECKONING. By Sir Robert Bruce Lockhart. Demy 8vo. 384 pages. (Putnam 1947.) 18s.

A personal account by the Director-General of the Political Warfare Executive of his department's activities during the War, and of his own impressions during the two years preceding it.

A LETTER FROM GROSVENOR SQUARE; AN ACCOUNT OF A STEWARDSHIP. By John G. Winant. Demy 8vo. 200 pages. (Hodder & Stoughton 1947.) 12s. 6d.

INTERNATIONAL RELATIONS BETWEEN THE TWO WORLD WARS 1919–1939. By E. H. Carr. Crown 8vo. 303 pages. (Macmillan 1947.) 7s. 6d.

U.S.S.R.: A CONCISE HANDBOOK. By Ernest J. Simmons. Demy 8vo. 494 pages. (Cornell University Press, New York 1947.) 25s.

NEW ZEALAND AT WAR. By Kenneth Hancock. Crown 4to. 351 pages. (Reed, Wellington, New Zealand 1946.) 27s. 6d.

AUSTRIAN REQUIEM. By Kurt von Schuschnigg. Crown 8vo. 270 pages. (Gollancz 1947.) 7s. 6d.

The author, who followed Dollfuss as Chancellor, tells of the last days of Free Austria, of the European relations of Nazi Austria, and of his experiences in prison.

WHITE COOLIE. By Ronald Hastain. Demy 8vo. 303 pages. (Hodder & Stoughton 1947.) 10s. 6d.

A personal record of a prisoner of the Japanese in Singapore and Siam, and later as a captive in a prison ship through typhoon and shipwreck to Japan, where he endured industrial slavery until rescued by the Americans.

THE CITIZEN AND GOVERNMENT. By John A. Hawgood. Demy 8vo. 128 pages. (Jarrold 1947.) 6s.

An examination of the duties of citizenship and of Government, with comparative comments on the United States Government. A good background of historical political development and of local government to-day is illustrated with charts and photographs.

THE ALLIED MILITARY GOVERNMENT OF GERMANY. By W. Friedmann. Demy 8vo. 362 pages. (Stevens & Sons, for London Institute of World Affairs 1947.) 25s.

No. 8 in the Library of World Affairs.

TWENTY-TWO CELLS IN NUREMBERG. By Douglas M. Kelley. The Findings and Impressions of the official Psychiatrist who examined the Nazi criminals. Crown 8vo. 202 pages. (Allen 1947.) 9s. 6d.

U.S.A.: AN OUTLINE OF THE COUNTRY, ITS PEOPLE AND INSTITUTIONS. By D. W. Brogan. Crown 8vo. 143 pages. (Oxford University Press 1947.) 5s.

NOTHING TO FEAR: THE SELECTED ADDRESSES OF FRANKLIN DELANO ROOSEVELT, 1932–1945. Edited by D. B. Zevin. Demy 8vo. 470 pages. (Hodder & Stoughton 1947.) 30s.

MAXIMS AND REFLECTIONS OF THE RT. HON. WINSTON S. CHURCHILL, C.H., M.P. By Colin Coote and Denzil Batchelor. Crown 8vo. 176 pages. (Eyre & Spottiswoode 1947.) 8s. 6d.

This volume presents extracts from Mr. Churchill's writings and speeches catalogued under headings of preferences, opinions and ideals, including a chapter of opinions on war and on the Empire.

A GERMAN OF THE RESISTANCE: THE LAST LETTERS OF COUNT HELMUTH JAMES VON MOLTKE. By Count Helmuth James von Moltke. Crown 8vo. 71 pages. (Oxford University Press 1947.)

ETHIOPIA UNDER HAILE SELASSIE. By Christine Sandford. Demy 8vo. 149 pages. (Dent 1946.) 10s. 6d.

PEACE OR POWER. By Harold Butler. Demy 8vo. 269 pages. (Faber & Faber 1947.) 15s.

The author reviews the present state of the Western World and demonstrates that the conflict between East and West is not just the conflict between communism and democracy, but something with deeper historical roots. He surveys the trend by the parts which Great Britain, the United States and the Soviet Union are playing in it.

DOMINION OF THE NORTH: A HISTORY OF CANADA. By Donald Grant Creighton. Demy 8vo. 535 pages. (Robert Hale 1947.) 15s.

STORIES OF CHINA AT WAR. Edited by Chi-Chen-Wang. Demy 8vo. 158 pages. (Cumberlege, Oxford University Press 1947.) 10s. 6d.

MIDDLE EAST JOURNEY. By Richard Goold-Adams. Demy 8vo. 195 pages. (Murray 1947.) 15s.

The author describes the component countries of the Middle East as he saw them during his service there in 1943. Travelling through Egypt, Palestine, Transjordan, Iraq, Kurdestan, Syria, the Lebanon and Cyprus, he gives an outline of their histories from the earliest days, and an account of some of their problems.

A JOURNAL OF THE LATE MOTIONS AND ACTIONS OF THE CONFEDERATE FORCES AGAINST THE FRENCH IN THE UNITED PROVINCES AND THE SPANISH NETHERLANDS, with curious remarks on the situation, strength and rarities of the most considerable cities, towns and fortifications in those countries, together with an exact list of the Army. By "English Officer." Crown 8vo. (Richard Baldwin 1690–1697.)

THE ROYAL HOSPITAL, CHELSEA. A Paper read before THE SETTE OF ODD VOLUMES at the Fifth Meeting of the Sette held at the Savoy Hotel, London, on 23rd February, 1937, by General Sir Walter Pipon Braithwaite, G.C.B., Governor of the Royal Hospital, Chelsea, and Peltast to the Sette. Foolscap 8vo. 38 pages. (Privately published 1947.)

LOST MEN OF AMERICAN HISTORY. By Stewart H. Holbrook. Demy 8vo. 370 pages. (Macmillan, U.S.A. 1946.) 16s.

A record of important figures, both men and women, who have contributed to America's development, but who are now obscure or forgotten.

THE EUROPEAN COCKPIT. By William Henry Chamberlin. Demy 8vo. 330 pages (Macmillan, U.S.A. 1947.) 20s.

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This is a commentary on foreign affairs compiled by the author when he was American Secretary of State, and is based on notes taken at conferences at which he assisted from Yalta onwards.

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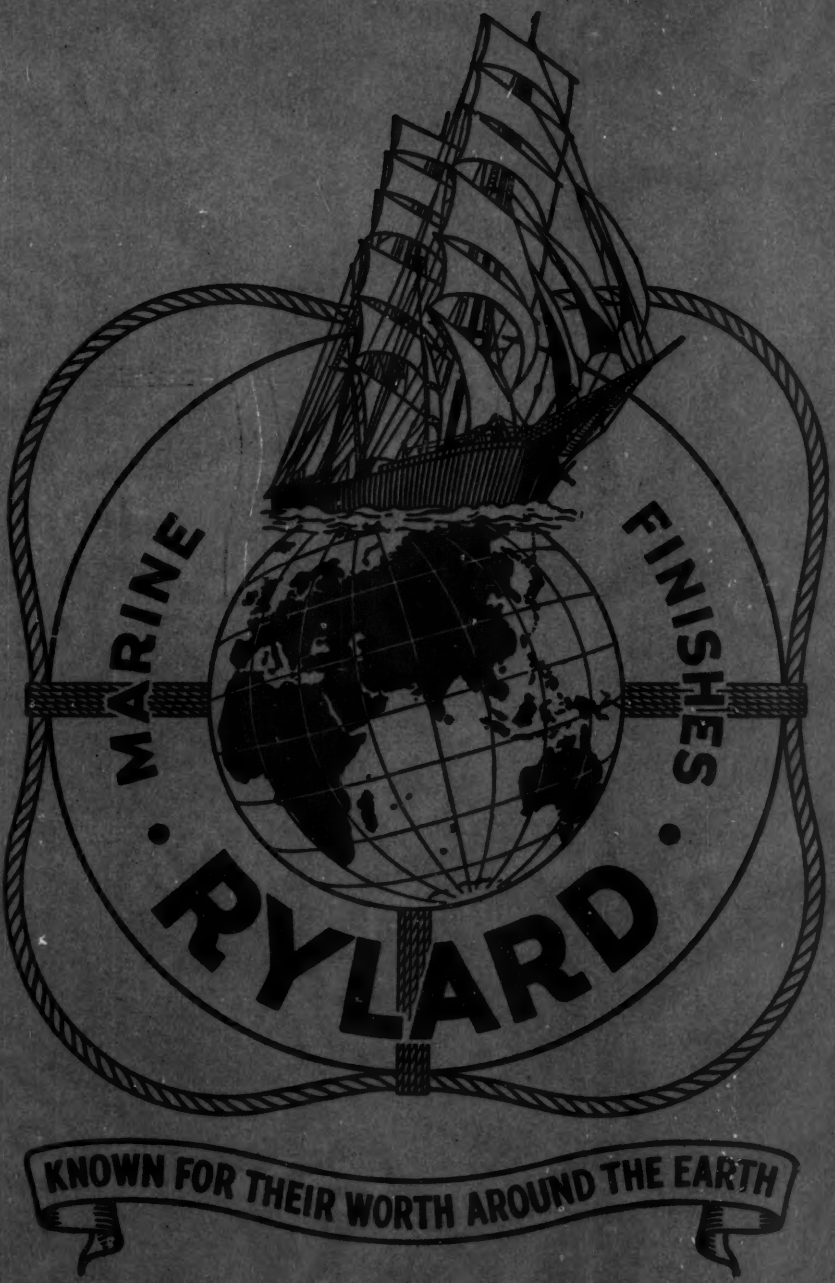
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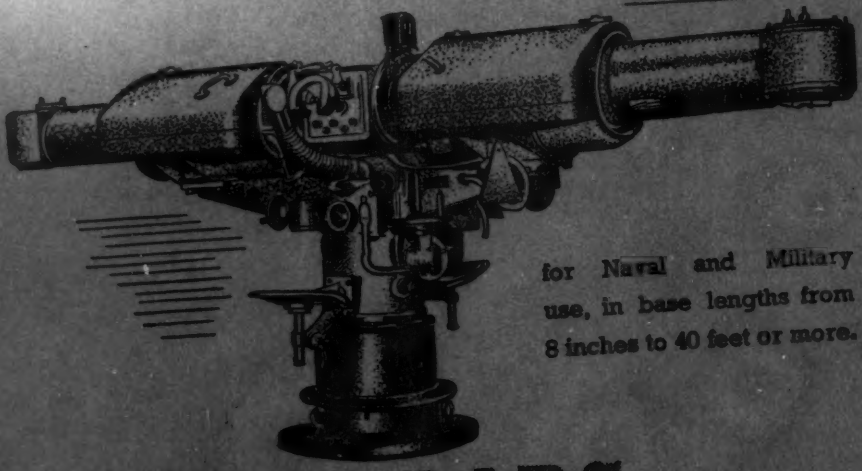

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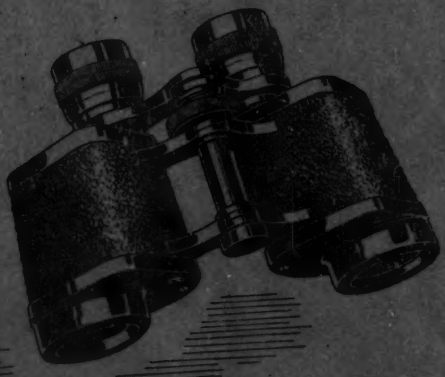

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